A NOVEL OF THE FUTURE COMPLETE IN THIS ISSUE!

STARTLING STORIES

15¢

SPRING ISSUE

THE DIMENSION OF CHANCE

A Hall of Fame Classic

By CLARK ASHTON SMITH

A THRILLING PUBLICATION

OTHER *Eyes* WATCHING

An Amazing Complete Novel

By POLTON CROSS

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Based Upon the Characters Created by EDGAR RICE BURROUGHS
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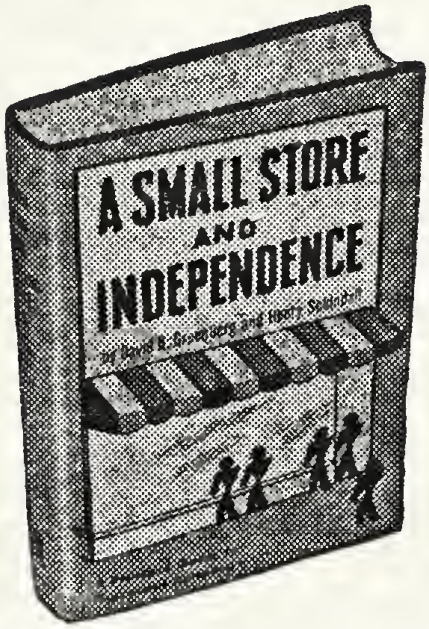

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PARTIAL LIST OF CONTENTS

What kind of store and where?
How much capital do you need?
On signing a lease.
Making a good-looking store.
How to buy.
General policies in merchandising.
Managing a store.
Budgeting.
Stock turnover.
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Records—a simple bookkeeping system.

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Home furnishing store.
Food store.
Infants' and children's wear shops.
Bookshops.
Jewelry store.
Fruit and vegetable store.
Radio store.
Ladies' specialty shops.
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STARTLING STORIES

Vol. 13, No. 3 CONTENTS Spring, 1946

An Amazing Complete Novel

OTHER EYES WATCHING

By POLTON CROSS

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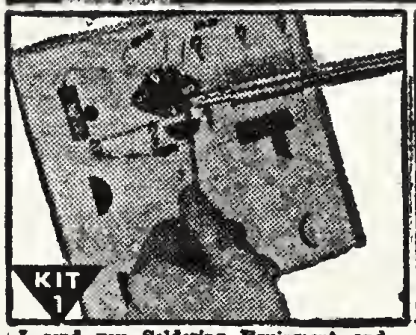

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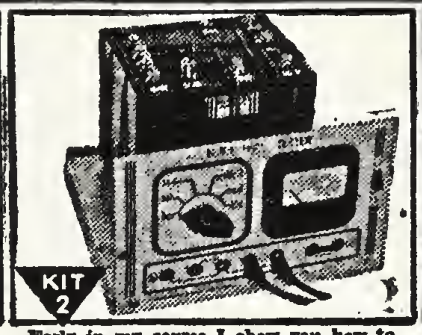
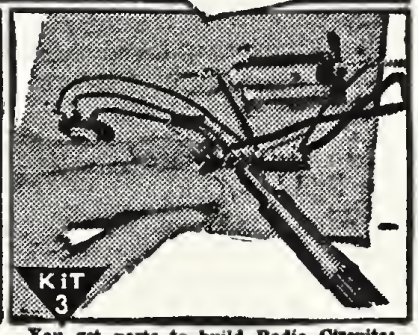


Early in my course I show you how to build this N.R.I. Tester with parts I send. It soon helps you fix neighborhood Radios and earn EXTRA money in spare time.



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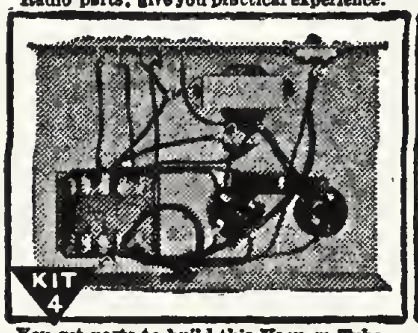

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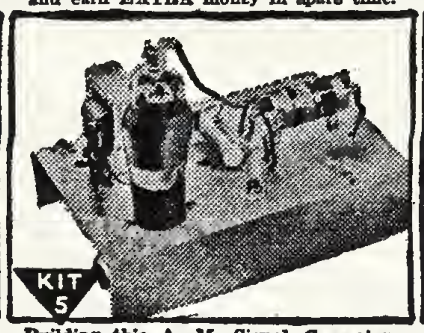

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BRING the Sarge the last keg of Napoleon vintage Xeno, Frogeyes—and the small ray-pistol from the inboard locker. And call the other two unloved children of a Plutonian musk-ox, sired by a hybrid Vulcanian Aardvark, in with you.

Before blasting himself into electrons, this old astrogator wishes to tell all of you what he thinks of you.

What have you done? Obey orders and you'll find out, you myopic satellite of a Jovian sub-cretin. And shake those dusters you call pedal extremities, my web-footed Judas. And stop sniveling!

Garrummmph!

Very well—at least you can still obey orders understandable by a Terrean tot of two. I congratulate all of you. First the Xeno—and stand at attention, Wart-ears. For the love of Jupiter, stop wiggling those nodules on your aural appendages. It's enough to give a good Sarge the Uranian pip. And close your mouth, Snaggletooth. You're enough of a nightmare under the best of conditions. *silence*—while the Sarge contemplates his Xeno.

Hic! Now, my varlets, I hope the enormity of the crime you have committed under the Sarge's name will penetrate those scaly hides of yours.

What's that? You don't know yet? Listen and weep. . . .

On the cover of the March, 1946, issue of STARTLING STORIES, you oafs listed a Hall of Fame Classic entitled TWELVE HOURS TO LIVE as written by Clark Ashton Smith. That story was written by another sterling author altogether, Jack Williamson, a Terrean of literary note in the STF world. THE DIMENSION OF CHANCE, by Smith, is the Classic in the current issue!

Never mind the bleats of apology, my fine feathered brachy-cephalics. Oh, well, half an oaf is probably better than no oaf—but three quarter-oafs are beyond this old space dog's powers to deal with them. So now it's the ray pistol for the Sarge!

But what's this? Great ghosts of Ganymede! Ye Sarge is going to stay his hand—at least until he can locate a Terrean fence scribbler, address unknown, who signs his desecration Danas. If the ray pistol is too merciful, prepare a slow-action, radar-guided personal atomic bomb. One that will take about six months to vaporize him.

Look at what he's done to ye Sarge, Snaggletooth. How can he ever live it down—I

mean the Sarge, not Danas. *He* isn't going to live much longer. Get a load of that slathering kisser! And that Lucius Beebe-Adolphe Menjou outfit he has me wearing. Those cobwebs are a fine commentary on your housekeeping abilities and industry, Wart-ears, sink me if they aren't.

So tune up the jets and the Xeno. We're off to Earth to pick up this Danas' vibrations and slowly turn him to dust. He'll be surprised, will he not, my fine space servants, when he cleans his room in the morning and finds his big toe has been swept away by the

(Continued on page 8)

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THE ETHER VIBRATES

(Continued from page 6)

broom. Six months from now not even a vacuum cleaner will be able to pick him up!

OUR NEXT ISSUE

BUT while the S.S. STARTLING STORIES is hurtling toward Earth with all jets blasting at full power to deal out its terrible vengeance on Danas, ye Sarge has a message of hope to bring to his Terrean type-scanners. In the July issue, Henry Kuttner is being featured with his greatest fantastic novel, THE DARK WORLD. And this is a full-length job which even the followers of the late A. Merritt and Howard Phillips Lovecraft have in all probability never matched.

THE DARK WORLD tells the story of a young American who feels a mysterious call to a distant autumn bonfire at twilight and who, after receiving a strange nocturnal visitor, finds himself catapulted into a tangential world where his alter-ego is a monster of cruelty and sly oppression.

It is a world of magic, yet of understandable if grotesquely distorted physical forces, a world where he must struggle not only against some of the deadliest and most loathsome forces man ever knew, but also against the powerful will of the man who has substituted for him in the homelier, more kindly world we know.

In this great novel, Kuttner has succeeded in combining the magnificent beauty and terror of true fantasy with subtle and convincing explanation that not even the most dyed-in-the-wool "pure" scientification fan can object to. Ye Sarge is convinced this is the outstanding postwar job SS has run.

Accompanying the novel is a memorable Hall of Fame Classic, THE MAN WITH X-RAY EYES, by Edmond Hamilton himself. Those of you who don't remember this big-time story from its earlier printing will do so from next issue on. It has earned its designation as a classic. And there will be other

(Continued on page 10)

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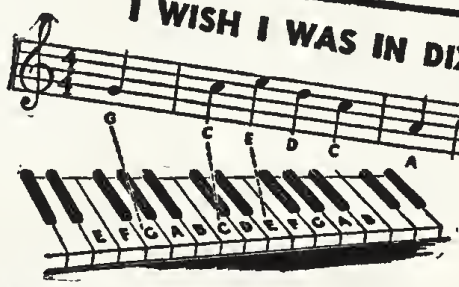

On the diagram above the first note on the music is "G." You'll find that "G" is the white key between the first and second of the three black keys just above the middle of the keyboard. From this you can find the other notes. You'll be playing the melody of that famous tune, "Dixie." Now read below how you can learn to play any instrument this quick, simple, low-cost way!

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THE ETHER VIBRATES

(Continued from page 8)

short stories and features, including, of course, Ye Sarge—if he doesn't use that ray-pistol on himself after all, what with the antics of his three space-zanies.

ETHERGRAMS

SINCE STARTLING STORIES has returned to a bi-monthy basis, the mail bag—transmitted by etherscope to Ye Sarge far in outer space—has been lagging still further behind. Some of you letter writers might try writing in a bit sooner. This old space dog will appreciate it.

But the sack is full, and the complaints and laudations continue to come in in mixed lots. Okay, Froggie, let's get started. Set up the protective screens so Ye Sarge has at least a faint chance of survival.

CANADIAN CARP

By A. Bayjan

Dear Sarge: Winter STARTLING STORIES just to hand, and read with enjoyment. But herewith two complaints. In "Outlaw World" I was shocked to find a *hollow* asteroid with people living on its *inner* surface! For unless Isaac Newton was utterly wrong and Albert Einstein no better than a bungler, if there were such a thing as a hollow world every loose object inside it would drift to the centre of the cavity and there remain.

Any kid who has done High School physics knows that the resultant gravity-pull of any body acts towards its centre of mass, and the very most elementary considerations of symmetry will place the centre of mass of *any* sphere, solid or hollow, at its centre of figure.

So Capt. Future & Co. would have had no trouble in finding Ru Ghur & Co., they need only have shut off all rocket-tubes and the "Comet" would have drifted to where outlaws, vulcanians, mirage-monsters, et al., would all have been cuddling sociably in the middle. Ooh! Sarge!

My other carp concerns the cover. Curtis is nice and snug in a very handsome space-suit, but mightn't Joan have been chilly? Not to mention the danger of bursting—fifteen pounds per square inch inside, nothing outside!!! Besides, she was wearing tailored space-slacks, (Page 14, Column 2, line 21.)

But I liked both the short stories.—*Hanover, Ontario.*

So he liked the short stories, the impudent space-pup! Snaggie, old tooth, bring out some non-vintage Xeno. This baying Bayjan deserves no better. So he is dubious about Kiwi Hamilton's physics. How does he know what life inside a hollow world would be like? Or gravity either? Tell him to leave the author alone and at least allow him a modicum of probability.

He should remember that scientifiction is science fiction—and fiction is governed by no laws of physics, praise Allah. It has enough trouble with laws of its own that are far more difficult to follow because they are subjective rather than objective in origin.

Now for carp two—the matter of Joan and the space-suit. In the first place, the idea of our heroine being chilly under any conditions is an out-and-out insult. Secondly, she must have been coated with some sort of anti-burst spatial collodion which the author merely forgot to mention. As for the slacks, most people take them off before going swimming, and she is certainly swimming through space. All this aside, it makes a better cover as Bergey handled it, and all of you little literal minds jump into the Red Spot on Jupiter or something. Next, Wart-ears!

THE SOUTH MILLS GRIND SLOWLY

By Ross "Sergei" Burgess

Dear Serge, Sarge, Serge, Who cares? Here is a second letter from *my* favorite character. Namely me. *Oui, Ja, Si,* (Earthian) *Lni, Huun, Clac,* and *Fle* (Ninth Dimensional) Or in plain words—YES! Say, how did we get on this subject, anyway?

After mixing several subjects, shaking well, and dropping them all into a hat, picking one, we have. . . .

Dear Serge, tell that—those guys who squawked about Bergey's CP on the Aftermath issue, tell those guys that the moron with the handlebars was not Jerry Colonna. He wasn't singing, either. He was scared. The yeller sky. Oh well, I liked that cover and that makes up for anyone who doesn't. Doesn't.

While we're on the subject of covers, and YOU weren't, give us more spacers. Give us the rockets and the BeMs, but please, Tugwell, leave the ladies to the inside. And as to the ladies, tell Boigey that Joan Randell was dressed in space-slacks, not a—er—a—well, not what she WAS wearing.

As I had nothing to do just before your mazine hit the stands I decided to rig up a Space-Scanner. So, the better to see youse with, my dear-s. After an evening's hard work (for me, ANY work is hard) I had it completed. Then to test it. I aimed it at the house of the brunette who lives down the street. Turn it on—Whee-Wheeeew! HowoooOOOOOOO!

After six hours I turned the dial to Mars, hoping to catch a glimpse of Ye SArGe. At Mars: "Sorry, bud, he left five minutes ago, heading for Ceres." At Ceres: "Sorry, Doc, he left four minutes ago for Jupiter." Two minutes later at Jupiter: "Sorry, Mac, he left seven minutes ago. Heading for Uranus." "What about Ringy?" "Oh, they won't let him near that planet." One minute later at Uranus: "Sorry, Jaxon, he just left for Neppy."

After a couple of seconds: "Neptune: "Oh, Saturn. Here he is: right over here."

At last. I took one good look and—EEEEyyyaaaaa-AAAAHHHHH!!!

I was under oxygen for two weeks.

After recovering—Sarge, is that thing on the left side of your face a third nose? Or a third ear? And how do you walk with six legs? And is the thing from your left side a tentacle? Or is it another arm? That's what it must be. It had an elbow.

Now, the classifications!

Jimson Island Giant.....BAH!
Forgotten etc.....BAH!
Outlaw World .....Corny, but....Ahh.
Best letter in SS.....Ross Burgess
Best illu in SS.....Orban (He's *good*)

Well, now that I have aired my say, (And said my hot air) I had better be hurrying back to the Ninth Dimension.

Tally Ho. Vallny, and don't leave the time machine behind THIS time. (Y'know, it took me twenty thousand years to find the darn thing last time). Oh well, back to my Space-Scanner, and the brunette. Owooooo-OOOOOooo-o—dash it all! Vallny left IT behind this time. (The Scanner—not the brunette. If he left her back on Earth I'd carry him to Arcturus and leave him there!)—*South Mills, North Carolina.*

Even after correcting the atrocious spelling in the above alleged epistle, Ye Sarge considers it the silliest of this or any other year—

(Continued on page 103)

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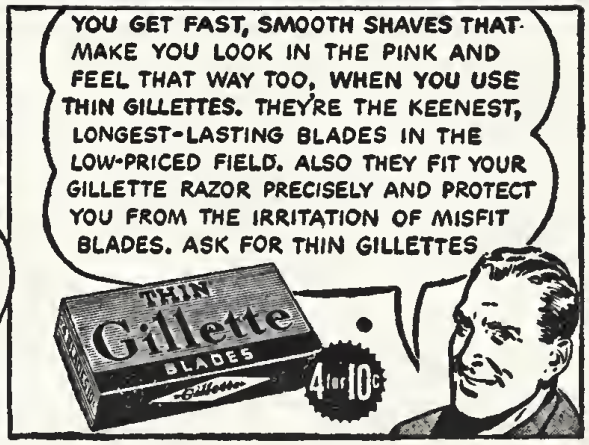

Vera screamed as the overload blew out the circuit (CHAP. I)

OTHER EYES WATCHING

By POLTON CROSS

Plunging into the dark mysteries of the fourth dimension, Dr. Douglas Ashfield and a beautiful girl find themselves beset by the cosmic chaos which sweeps Manhattan in 1970!

CHAPTER I

Matter Into Matter

THERE were only three people waiting in the reception room as the girl in the expensive powder-glass frock entered. She was a blonde, strikingly so, exquisitely made up, tall, and her figure streamlined into all the grace the beauticians of 1970 could achieve.

She carried herself regally, betrayed her high social caste in every gesture. And with reason. Vera Brooks was worth seven million dollars in her own right. It could buy anything she needed, except breed—and that Mother Nature had conferred upon her for nothing.

"Good morning, Miss Brooks," the receptionist greeted her pleasantly, smiling. "Dr. Ashfield won't be very long."

"Important cases?" Vera asked, her bright

An Amazing Complete Novel of the Future

gray eyes glancing towards the adamantly closed plastic door of the famous oculist's surgery.

"I'm afraid so."

Vera nodded, reflected, then retired to one of the armchairs by the far wall. She had practically gone through four illustrated magazines before the last patient departed. Then she got decisively to her feet, crossed to the surgery door and tapped upon it. Without giving time for a reply, she moved inside. Gliding gracefully past a massive supermodern ophthalmoscope, she confronted a tall, dark-haired man with a sharply hooked nose.

"Good morning, Doctor!" she said, and Dr. Douglas Ashfield looked up in surprise to meet her impish smile.

"Why, Vera!" He clasped her slender hands earnestly. "I *am* glad to see you again! Last I heard from you you were jet-planing somewhere in the Pacific."

"I wasn't intending to come back to New York so quickly," she answered. "I only got in an hour ago, and came straight here. It's Mace's fault, really. He sent for me, and you know Mace! Anyway, I'm glad to be back, if only to see you again." The girl paused and glanced round thoughtfully at the optical instruments. "Can you tear yourself away long enough to take me to lunch?"

"Can I!" Douglas Ashfield pulled off his white coat and hung it decisively on the walnut stand. Then as he buttoned up his cuff-studs his face became thoughtful. The girl had seen that look many a time before, when the firm lines of his still young face tightened and his keen dark eyes took on a meditative light.

"I'll listen," she offered, smiling. "What is the great experiment this time?"

"Oh, just a dabble in mitonex lenses." He shrugged. "That is the new plastic Brassington found a couple of years ago. First class stuff for lenses, but I think it has other possibilities. It's the sclerotic coat which is worrying me now."

"The only coats I know about are fur or glass," the girl laughed. "Incidentally, this frock is made of glass-powder. I bought it in Florida. How do you like it?"

SHE turned in a lovely pirouette. Douglas Ashfield looked at the frock absently, his mind on other matters.

"Nice," he decided finally. "Very nice."

Then he jerked himself back to the everyday and hurried into his suit coat. On the way out he told the receptionist that his surgery would be closed until evening. Then with Vera on his arm, he took her out to her sleek dream of a car parked against the sidewalk.

"The Golden Comet," Douglas told the chauffeur. Then he settled beside the girl in the air-sprung cushions.

"I suppose your brother is as peremptory as usual with his orders?" he said, as the car sighed away from the curb.

"I'm afraid so," Vera admitted, sighing. "I don't think he realizes just how much he *does* rule my life. It may be because I'm eight years his junior. That flatters his paternal instincts since Mother and Dad are both dead. Or else it may be that he just loves power and the chance to order people around."

Douglas smiled to himself, deciding that a desire to exert authority was probably the case. He only liked Mason Brooks because he was Vera's brother, and for no other reason. Brooks was the chief physicist in the organization known as the City Scientists.

Impersonal, cold, he was about as friendly as the inhuman work he studied. And Vera, never very iron-willed anyway, was more or less in his hands. She had money, yes, but so had he. In fact he was two million dollars ahead of her. Old Man Brooks had revealed himself as something of a throwback in believing man was still the dominant sex, and therefore entitled to the lion's share of his huge fortune.

"Just why did Mason send for you?" Douglas asked, when they were seated before the Golden Comet's most exclusive offering in lunches. "Anything private?"

"I don't know whether it is or not. He's engaged on an experiment which he says involves the subat—sub—" Vera hesitated vaguely.

"Subatomic?" Douglas suggested.

"That's it! Something involving the subatomic waves of matter. He believes his idea will mean a great advance in science, and if that is so, he is prepared to sink all his money into it—and he may need some of mine too. So he sent for me. I am to witness this experiment. If it succeeds, you'll see me writing a check before you can bat an eyelash."

Douglas ate for a while in silence, rather wishing that he too had a wealthy sister on whom he could draw for money so freely

Something wraith-like came curling out of the depths of space (CHAP. XIV)

when he needed it. Of course the girl would soon be his wife, but he had the idea that a man in the real sense of the word does not progress on the strength of his wife's bankroll.

Douglas had money too, of course—he was a most successful ophthalmic surgeon and consultant—but it certainly did not amount to seven million dollars.

"I suppose this experiment is exclusively for you and Mason to witness?" he asked presently.

"He didn't say," the girl answered, eating daintily. "You know how offhand he is. But since it is at home in his private laboratory and not in the city physical research department, I imagine it is private. Why?"

"I was just wondering if I could see it too—and decide if it is worth you putting your name to a check. I'm not much good at physics, I admit, but I'm not a bad business man. I don't want to see my future wife depleted of her bankroll because of what may turn out to be a harebrained scheme. I know what a dabbler Mason is—he's always at it! And so far he's never done anything particularly outstanding."

"If you like to tell him that, you're welcome," the girl said seriously. "Personally I'd hesitate."

Douglas considered for a moment or two. Then excusing himself, he went over to the visiphone booth across the room. In a moment he had switched through to the Brooks residence on Fifth Avenue and the manservant's face appeared on the viewing-plate.

"Mr. Brooks, sir?" he repeated, in response to Douglas' inquiry. "Just a moment."

AFTER a while the physicist himself appeared, and Douglas decided he did not like the full-color image any more than he liked the original. Mason Brooks was lean-faced, with a droop in the corners of his thin lipped mouth.

He had the very long nose, which often goes with the inquisitive mind, and sharp gray eyes the same color as Vera's, but with none of their carefree brightness. Intelligent beyond the average—this was clear from the remarkably high forehead and the dead black hair oiled down away from it.

"Hallo, Douglas," he greeted briefly. "You're lucky to catch me at home. I'm just having lunch. Something I can do for you?"

"Vera's back in town and we're having lunch at the Golden Comet," Douglas explained. "She's been telling me about your experiment."

"Oh?" A vague surprise seemed to pass over Brooks' face. "Well, it's right, of course," he said. "What about it?"

"Is it exclusive, or can *I* come, too?"

"By all means, if you wish." Brooks was none too cordial about it. "I shouldn't have thought myself, that a dabbler in mitonex lenses would have much interest in deep physics. Still, if you want to improve your knowledge, it's okay with me. I don't expect that dizzy sister of mine to understand my work, but for certain legal reasons she has to be present."

Douglas guessed that the legal reasons were connected with the possible need for her money but he refrained from saying so.

"I'll come then," he promised. "And thanks."

"You're welcome," Brooks said indifferently. "In case Vera has forgotten it, the time is three o'clock. I'll be out until then."

Douglas switched off and returned across the restaurant to rejoin the girl. She looked at him curiously.

"Been bearding the lion?" she questioned.

"Yes, and I'm coming with you. Three o'clock."

"That will be a real prop for me to lean on," she said, relieved. "I hate these stuffy scientific experiments! Give me the open air where I can tear through the sky in a jetplane, or else shoot in a V-Sixteen across the Atlantic. Anything like that."

"I know." Douglas looked at her with his serious dark eyes. "You're a girl to whom life and movement mean everything. I've always realized that. I hope you're not going to find me an old sobersides when we're married. I shall have to stick to my work and my experiments, no matter what happens."

"What men you and Mace are for experiments," she exclaimed. "But I promised I'd listen to you, didn't I? Tell me just what you are doing with this—this mitonex."

"Well, you'll hardly credit it, but I think that with mitonex I can make something of everlasting service to humanity—create an artificial eye!"

The girl did not look impressed. She went on with her meal with youthful energy.

"That isn't so wonderful, Doug." She shook her blond head. "An artificial eye has been going for ages."

"Not a glass eye, dearest. An artificial eye which can *see!*"

She looked up at that, her pretty face startled.

"But that hasn't ever been done! In fact science says it just *can't* be done!"

"Douglas Ashfield says it can," he replied. "It's just the problem of the sclerotic coat which is bothering me a little. That's the white of the eye, you know, surrounding pupil and iris."

"You think you can do this—give sight to the blind?" the girl asked breathlessly. Then as he nodded, her hand stole across the table and clasped his encouragingly. "Now that *is* worth doing. It really is! So much more useful than Mace's crazy experiments which will be bound to blow him up one day."

They both laughed, and thereafter—to the girl at least—the subject seemed to be forgotten. Douglas, knowing her somewhat wild spirit, knew that she had meant it when she had approved his idea.

But she had not the temperament or maturity for sustained enthusiasm over a subject she did not understand. By the time lunch was over, experiments in artificial eyes and her brother's dabblings seemed to be furthest from her mind.

She insisted on an hour in the local news telehall and Douglas agreed just to please her. When they emerged into the sunshine again it was two forty-five, and the car was waiting for them. Punctual to the minute they were outside the door of the great Brook residence at three o'clock.

THE manservant let them in and did not look at all surprised at Vera's quick entrance. He was accustomed to her spasmodic comings and goings.

"My bags are in the car, Jefferson," she said briefly, taking off the conical absurdity which passed for a hat. "Where is my brother?"

Jefferson did not need to answer for the tall figure of Mason Brooks appeared at that moment from the opposite end of the great hall. He stooped and gave the girl a dutiful kiss on the left cheek, then seized Douglas' hand in a bony clutch.

"Decided to risk it, eh, Doug?" he asked dryly. "Well, I can't guarantee that you'll be interested, but I can hope. You've had lunch, I think you said?"

"We're all ready for action," Vera announced.

"Good! That saves any delay. Come along to the lab."

Brooks preceded them to a door leading off the hall and flung it open. To Vera the place was familiar, even though it was sacrosanct territory which she had never entered except at her brother's request.

To Douglas Ashfield, though not a scientist in the accepted sense, it was a fascinating vision. Mason Brooks' money had succeeded in making the place as fully equipped with every modern scientific device as the city physical laboratories themselves.

Brooks shut the door and came forward, standing with his hands in the pockets of his white overall. Then he nodded to a machine which was obviously electrical in nature.

"I don't know whether either of you know anything about the constitution of matter," he said presently, raising an inquiring eyebrow.

"I know a little," Douglas answered, as Vera shook her fair head in bewilderment. "I know matter is composed of atoms and molecules—that nothing solid is *really* solid."

"That, of course, is high school knowledge," Brooks observed dryly. "We shall need to go much deeper here. It is assumed by most leading scientists today that all kinds of matter can be penetrated, if one has the right apparatus for doing it.

"I do not mean that a six-inch armor plate can be pierced by a high velocity shell—but that, say, a six-foot cube of cast steel can be made to pass through another six-foot cube of cast steel without damage to either."

"That sounds rather like a conjuring trick," Vera remarked.

Brooks glanced at her coldly.

"I did not assemble all this apparatus and work myself nearly into brain fever in order to perform a conjuring trick, sis, believe me! This conception is highly scientific, and I believe it is now perfect. If I can pass a solid through a solid without damage to either, the scientific and commercial possibilities will be endless.

"Man will be able to probe deep into the earth without any resistance. Military equipment like the five-hundred-ton tank will be able to go right through the thickest defense wall. The developments will be legion!"

"I can see that," Douglas agreed thoughtfully. "But how is it done?"

"Ah!" The physicist grinned cynically. "Now we come to the deep part. Solids, as you remarked, Doug, are composed of atoms,

and atoms of course are miniature solar systems. In other words, if you can picture them from a sideways angle they are *flat.*

"But this flatness points in all directions or, more concisely, it is not organized. Because of the disorganization, no solid can fall through another. No two solids can be said to occupy the same space at the same time."

"Clear so far," Douglas agreed, thinking. Then he smiled as he saw Vera wofully holding her forehead.

"Now, atoms have poles," Brooks went on deliberately. "But these poles point in all directions. I have devized a system whereby magnetism can make them all point in *one direction.* By this means I can make the atoms all flat—parallel—so that they only block about fifteen percent of the space they occupied in their disordered forms. Under this influence one solid can go right through another. But the moment the transition is complete and the magnetism removed, the atoms swing back into their former disordered state and solidity returns."

There was silence for a moment. Douglas nodded slowly.

"Yes—yes, I see what you mean. If you can do it, it will certainly be the biggest scientific achievement in many years."

A FAINT flush of pleasure crept into the physcist's pale cheeks. Praise for his work was the one thing he loved.

"It will take plenty of money to demonstrate the principle on a big scale," he said. "I have made so many bad experiments that the City Scientists haven't a great deal of faith in me. That may mean floating a company of my own. Anyway, we'll see first how I go on. I know it will work because mathematics have proved it. Now, watch carefully."

He switched on his peculiarly designed apparatus and tubes began to glow. Bar magnets too took on a faint haze of energy. The dynamos crept up the scale and whined.

Fascinated, Vera and Douglas stood watching together as two automatic arms shifted two heavy cubes of cast steel along a specially made cradle. As they came into the area of the bar magnets they hazed visibly and the other side of the laboratory became faintly visible through them. Then, gradually, they began to approach each other. They touched. There was a faint surge of added power in the equipment.

Then the impossible began to happen!

Each block began to melt into the other, both of them narrowing their sizes as they came near to an identical fit. It was like a movie wherein a shadow image steps into itself.

"I think that proves it," Brooks said, when one block was dead inside the other. "Now we can—"

He broke off suddenly, his startled eyes on the power-gauges.

"Hang it!" he shouted. "I forgot! The extra energy means an increased load on the magnets, and I don't think they'll stand it. I've got to tear these confounded things apart before the fuses break!"

He swung around fiddling with the switches which controlled the block cradles. The two blocks began to come out of one another again, but they had only progressed about six inches before the dreaded thing happened. The overload blew the main fuses with a decisive snap. Other things occurred simultaneously.

Two blocks of steel were suddenly both in the same space at the same time. The colossal energy produced by such a condition liberated itself in the form of a resistless expansion.

Douglas had just time to behold the whole apparatus apparently hurtling straight for him. He heard Vera scream as she reeled back with her hands clapped to her face. Somewhere behind a machine Mason Brooks was cowering.

Then the laboratory attached to the Brooks mansion went sailing into midair and gave New York its most spectacular explosion for many a long day.

CHAPTER II

Synthetic Optics

FOR six weeks and more Douglas Ashfield had little real awareness of what was going on around him. People came and went like so many phantoms in the midst of chaotic dreams. It was only by degrees that he realized the truth—that he was in a nursing home, that three of his ribs, an arm, and a leg were broken, that he had had concussion and complications. But the powers of modern surgery had saved him. He was commencing to mend.

Then at last the clouds of his illness began

to evaporate. Weak but rational he was permitted his first visitor—Mason Brooks. The scientist looked unusually harassed as he drew up a chair to the bedside.

"To say that I owe you an apology sounds idiotic," he commented, as Douglas fixed his eyes on him. "I should have had more sense. I'd worked it out by mathematics but had never made a practical test."

"These things happen sometimes," Douglas muttered, without resentment. In fact he was rather surprised to find the physicist so penitent.

"I escaped the worst," Brooks went on moodily. "I ducked behind a machine and got nothing worse than deep cuts and a few abrasions. You're okay now and will soon be about again. But—"

He stopped, fingering his lower lip.

"It isn't—Vera?" Douglas asked sharply, realizing that her name had not been mentioned so far. "She wasn't—killed?"

"No, not that." Brooks got to his feet under an uncontrollable agitation. "She's alive—quite alive. In fact to look at her you wouldn't notice much difference. Face unmarked, body the same, only—you'd better see her," he finished, as though the subject were too much for him to handle alone.

He crossed to the door, opened it and reached outside. Douglas lay watching fixedly as the girl was led into the room. As Brooks had said she appeared no different—except for one thing. She was wearing large, deep blue glass goggles and moving uncertainly even through her brother held her arm.

Presently, as Douglas' horrified eyes bored at her, she reached the bedside. Her hands felt along the coverlet quickly, then she gave a little sigh of relief as Douglas' grip closed upon them. Carefully Brooks guided her into the chair, then he stood looking down on her morosely.

"I'm glad you're all right, Doug," she whispered, her voice hardly audible. "I was so afraid you might die."

"But you!" he cried. "What in the name of Heaven is wrong?"

"She's blind!" Brooks said abruptly, and Vera's lips tightened at the brutal frankness of it. "The explosion did it. Pieces of metal struck her in the eyes but missed her face. There was nothing for it but to remove the eyes entirely in case the metal fragments worked into the brain and caused death.

"I can see through solid walls," Vera said (CHAP. III)

Mercifully her face is unscarred."

"I'd sooner have died," the girl muttered. "What's the use of going on living in the dark? Why couldn't it have been anything else but *this?*" she burst out passionately. "I wouldn't have minded losing an arm, or a leg. They can be replaced. But to me, to whom the whole essence of life lies in movement and change, to be condemned to blindness is unbearable!"

Her voice stopped and the room was very quiet. Then she spoke again, with a half smile.

"Forget it!" she said. "I'm all right now. Just gets me down when I think of it. I'm no quitter. But now and again I do get frightened of the blackness."

Douglas stroked her slender hands gently, his eyes fixed on her pale distressed face.

"Would you mind taking the glasses off?" he asked quietly. "I'm an oculist, remember."

"I know, but even you can't repair what isn't there." The girl paused suddenly with a little catching of her breath. "Or *can* you?" she whispered. "I've just remembered that you said something on that awful day about artificial eyes."

"Take the glasses off," Douglas insisted.

She fingered behind her ears and her brother turned away and looked through the window. What regard he had for his sister was revealed more in that action than by anything else.

HAD he not been an oculist first and a lover second, Douglas too would probably have looked away. But he didn't. He fixed his gaze on the empty, tightly closed eyelids where the girl's eyes had been.

He studied the bluish spottlings where metal fragments had been driven deep above her eyebrows and at the edges of her temples. Then with an infinite delicacy his fingerends passed over the hollow eyelids. Finally he sat back.

"All right," he said. "Put them back."

"Pretty dreadful, isn't it?" the girl sighed, adjusting the goggles on the bridge of her nose.

Douglas did not answer for a moment. Presently he spoke slowly.

"I want you to take her home, Mason, and look after her well. I have to get myself right at the earliest possible moment. Then I will tackle the problem exclusively. There may be a cure. In fact there has *got* to be! Vera can't go through the rest of her life in total darkness, not in this modern age."

Brooks put a protecting arm round his sister's shoulders as she got up.

"What are you talking about?" he asked. "What's the use of raising false hopes? This isn't just eye trouble. The eyes themselves have gone!"

"But the sockets are undamaged," Douglas answered. "To put it more plainly, the scaffolding is still in good shape. I think I can create artificial eyes, and I've thought so for years. Now I must turn that thought into a fact!"

Brooks hesitated. Finally he gave an incredulous smile.

"Well, get yourself better anyway," he said. "Then we'll talk again. Come on, Vera—this way."

Douglas clasped her hand again, and watched as she was led from the room. He lay scowling for a while, before jabbing the bell button. From the nurse he ordered paper and pencil in such a fierce voice that she had inner fears for her safety.

The terrific stimulus of the tragedy he had witnessed got Douglas on his feet again in record time. Even before this he had spent every waking hour scribbling notes, making computations, testing theories, and discarding them.

The first thing he did upon returning to his home was to catch up to date on his practise—which took him a fortnight—and then he closed down for a month for so-called health reasons.

This done, he sent for Mason and Vera Brooks, summoning them to his surgery address where he had better opportunity for using his equipment.

"I think this is a waste of time," the physicist said, after he had settled the girl in a chair. "There's nothing you can do for my sister."

"I insist that there is!" Douglas declared, pacing up and down. "When I was in the nursing home I admit that I had my doubts. But I've worked out the final details since then. Just take a look at this."

He switched on a floodlamp and motioned Brooks to a table directly under it. Delicately held in a platinum claw, adjustable by set screws and pinions, was what appeared to be a human eyeball.

"Notice!" Douglas ordered, and switched the light off for a moment. Then when he flooded it on again the eye's artificial pupil contracted sharply.

"Hmm—pretty good," the physicist admitted.

"It's more than that," Douglas retorted. "It's perfect! This eye is made primarily of mitonex plastic molded at two hundred F. That means it does not become solid and hard but retains the soft elasticity of the normal human eyeball. In front, of a different grade of mitonex and approaching the normal focusing curve of the human eye, is a plastic cornea, and behind it the lens itself.

"The iris was the easiest part. It's made on the principle of a camera iris, so delicately sprung that the action of light photons striking it cause it to contract. When light in excess ceases to strike it expands to the point considered normal. The iris itself contains pigment, as does the human eye."

Douglas stopped for a moment and searched the scientist's lean, tense face.

"I tell you, Mason, I've reproduced here everything the human eye possesses! A human being can be duplicated in any case, for the body contains no chemicals which a laboratory cannot produce. By the same token I've reproduced an eye—the vitreous humor, the aqueous humor, the choroid coat, the sclerotic coat, everything."

"Including the retina and optic nerve?" Brooks asked, still unconvinced.

DOUGLAS nodded.

"Including those! The retina is simply the spreading out of a mass of nerve fibers forming the optic nerve itself, at the back of the eye. The optic nerve is only a carrier of sensation, the same as an electric wire carries current.

"You can see it here—this fine golden thread with a copper core. The thread reproduces the optic nerve with all the details of the natural one. So you see, nothing is missing."

"And you think it can give sight?" Brooks asked.

"I'm convinced of it."

"Nevertheless I'm going to correct this dangerous illusion, much as I want Vera to have her sight back!" Brooks' face had become grim. "You ought to know, as even a layman does, that the eye *itself* does not see. Put this in Vera's head and she'll still be stark blind."

"If it were unconnected, yes," Douglas agreed. "But the power of sight is situated in the cortex of the occipital lobe of the brain. The excitations there produced give rise to visual sensation.

"Connect the nerves of this artificial eye—or rather of both of them since I have this eye in duplicate—to the right parts of the brain and vision is assured!"

The physicist became silent, the corners of his mouth dragged down. Vera got out of the chair and found her way to the table.

"This all sounds rather wonderful to me," she said. "I wish I could see this eye you're talking about."

"The thing's too wonderful!" Brooks declared harshly. "The very operation itself would be extremely dangerous. You admit that, Doug?"

"It would, yes," he assented. "But don't forget that I am an ophthalmic surgeon and have tackled similar difficult jobs—and succeeded. I believe I could succeed here, too, and if so a new era in optics would be upon us."

"If!" Brooks echoed. "That implies a doubt. No, Douglas, you are not going to turn my sister into a guinea pig because of a bright idea you have. I won't allow it!"

"*You* won't allow it!" Vera exclaimed. "I've some say in this, remember. I'm the one who can't see, not you. I'm all for it. Anyway, if it fails I'll be no worse off and I shall know where I stand."

"I will not allow you to do it," her brother snapped. "I've never yet made a decision on your behalf which proved wrong. And I say that this is too risky."

"Don't you think you owe Vera a chance to get her sight back?" Douglas asked quietly. "But for you and your experiment she wouldn't be blind anyway."

The physicist tightened his lips.

"I'm of age, and I'm going to risk it," Vera decided finally. "Name the day and the hour, Doug, and I'll be here."

"If you do attempt this operation, Douglas, I'll bring the whole Ophthalmic Council down on your head," Brooks declared. "That isn't viciousness. It's plain commonsense. I know Vera is desperate, but I won't allow her to risk her life on an experiment which may prove fatal.

"In a year or two maybe perfection will be assured and other people will have taken the first blows. Certainly Vera won't! If the Ophthalmic Council learns what you are doing without their full sanction, it will mean you're sunk! You know that."

Douglas drummed his fingers on the table, his face set.

"It's up to Vera, not you," he said at length.

"Fix your day and let me know," the girl answered.

"Vera, don't be such a fool!" Brooks gripped her arm.

"I'm not a fool. You don't comprehend what I'm enduring. You are not wandering round in total darkness as I am. Do you realize that it is nearly three months since I saw a ray of light? Groping for everything, bumping into things, unable to see how I look? I can't bear it much longer. I'd sooner die than stay blind. I'm going to take the risk and be hanged to you."

Brooks eyed her for a moment, then his jaw squared.

"We'll talk it over," he decided, leading her to the door. "And I'd advise you to think again too, Douglas."

"Sorry!" He opened the door. "It's up to Vera."

He kissed her gently, gripped her hand and watched her and her brother go off down the corridor. Closing the door quietly he stood thinking, rubbing his chin with restless fingers.

CHAPTER III

Vision Beyond

AT THREE o'clock that afternoon Douglas received a visiphone call from the Ophthalmic Council. It was the face of Dr. Grant Hurley, the chairman, who appeared on the screen.

"The members have asked me to summon you to a meeting, Dr. Ashfield," he said coldly. "A matter has come up which is—er—rather outside normal ethics in the matter of optics. The meeting will be an extraordinary one and will be held at four this afternoon. You will make it convenient to be present, please?"

It was not a request but an order.

"Of course, Doctor," Douglas acknowledged, and switched off.

He had no illusions. Mason Brooks had evidently kept his word and tipped off the council. By law they controlled all the oculists and ophthalmic city surgeons, who worked only with their permission, and stayed within their prescribed boundaries.

It was good in one way, for it stopped the inexperienced dabbler from injuring patients, but from Douglas Ashfield's point of view it was bad. Very bad! Nor dare he refuse to attend a meeting if he wanted to remain in practise.

So at four o'clock he was in the Board Room with the seven directors of the council and chairman Hurley at the head of the long, shining table.

"Dr. Ashfield, I am in possession of a special letter sent to me this afternoon by Mr. Mason Brooks, the Chief Physicist with the City Scientists."

Dr. Hurley laid the letter on the table, open.

"Were it from a lesser member of the community I might have ignored its contents, so amazing are they," Hurley continued. "But from a man of Mr. Brooks' standing, the matter at once assumes serious proportions. He declares that you are trying to persuade his sister, Miss Vera Brooks, recently blinded in an accident, to undergo an operation by which you can give her artificial eyes which can *see!*"

Douglas smiled bitterly at the pedantry of the man, the verbal groveling to a man worth nine million dollars.

"The allegation is correct, Doctor," he answered briefly.

This started a hum of excited conversation round the table until Hurley's insistent, beating gavel silenced it.

"I can only presume, Dr. Ashfield, that you are joking," Hurley said acidly. "And I consider it very bad taste."

"Gentlemen, I *have* created an artificial eye," Douglas said, rather weary of having to repeat the details. "It can do everything which a normal eye does. It can give sight to the blind and thereby advance optical science a century. It can remove the biggest blight, barring death, that threatens humanity."

"It hasn't been done before," said Wilson, reckoned as the best optic nerve man in the States.

"That's no criterion," Douglas retorted, looking round on the incredulous faces. "I'm not going to recall to your minds what men said about Watt with his steam engine, Bell and his telephone, Lister and his antiseptic. I think you are intelligent men, willing to listen to anything that means advancement. I can provide it—and prove it."

"Since you can prove it, we are willing to listen," Dr. Hurley answered expansively.

"How soon can you produce this proof?"

"The moment I have operated on Vera Brooks."

"This is becoming a vicious circle," Hurley decided, ominous again. "We cannot permit an operation on a woman, and especially one so high in the social scale, without the method and result being thoroughly considered beforehand. We, the Council as a whole, forbid such an operation unless you have first submitted convincing proof."

Douglas gestured impatiently.

"How in the world can I prove it until a human being has had the benefit?" he demanded. "To try it on an animal would not convince you. An animal cannot tell us if it can see, even though we can discover if it reacts as though it can. I well know that the Council always need sweeping proof, beyond a shadow of doubt. And the only way I can get it is by performing an operation —on a human being—on Vera Brooks!"

There was a silence, then the chairman cleared his throat noisily.

"If you could perhaps find somebody less important?" he suggested. "Maybe an itinerant from the city's lower quarters? A blind worker, maybe? After all, the financial resources of Miss Brooks and her brother have a great deal to do with the welfare of the city as a whole."

"If, as you suggest, I were to use these artificial eyes on a beggar, it would take me ten years to make another pair?" Douglas retorted. "Do you imagine I would leave Miss Brooks, my future wife, in her present condition *that* long? No, gentlemen! In any case she has given her own personal sanction to the operation."

IT WAS plain Dr. Hurley was not convinced.

"Prompted by the elusive hope of regained sight, no doubt," he said pompously. "I am sorry, Doctor Ashfield. Either you operate on an unknown and show the results, or we cannot be interested. If in spite of everything, you proceed with an operation on Miss Brooks, you will be precluded forthwith from practise, and that, I am afraid, would terminate the career of a very clever ophthalmic surgeon."

"Even if Miss Brooks herself asked you to let me do it?" Douglas asked despairingly.

"Even then," Hurley replied adamantly. "Miss Brooks is in no position to make a decision. She is a drowning woman clutching at a straw. In matters medical it is the Council, not the individual, which makes the decisions these days. That is the law, you know."

Douglas hesitated for a moment, his bitter eyes glaring at the stony faces. Then without a word he pushed his chair back under the table and left the room.

Ten minutes later the visiphone was ringing in the Brooks' rebuilt residence, and the manservant answered. After a while Vera's face with the dark glasses appeared on the viewplate.

"Vera? Doug speaking. I'm going to operate. Your brother has done his worst with the Ophthalmic Council and they'll disown me for it. I'm risking that—if you'll risk your life?"

"Doug, you know I will. I believe in you and always shall. I meant it when I told you to name the day."

"All right then. This evening. I have two expert nurses I can call upon. I'll perform the operation in my own surgery. All I want you to do is go without food from now on. Can't undergo an operation on a full stom-

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ach. I'll call to see you on the pretext of taking you for a drive, then Mason won't suspect—I hope."

"I think he'll be out anyway," the girl answered. "He's hard at work in the city laboratory after hours trying to reshape that idea of his which got us into this mess. When it's over, Doug, the Ophthalmic Council will just have to believe!"

"Yes." Douglas had a mental vision of Hurley's beefy, pompous face. "Perhaps. Anyway, I'll be with you at seven this evening."

"Seven it is," Vera agreed, and switched off.

Promptly at seven Douglas was at the Brooks residence. As the girl had anticipated her brother was absent, and probably would be until a late hour.

Douglas helped her into the car and, driving it himself, he threaded his way through the city streets towards his own suite in the Cosmopolitan Building.

"Cheerful?" he murmured, as the girl sat beside him.

"More than I've ever been since I became blind," she said. "At first it seemed that there was no way out. I'd forgotten all about that talk we had at the Golden Comet about artificial eyes. But now— Oh, I know you'll succeed!"

"I've got to," he said grimly. "Not only because you are the most precious possession I have, not only because I want you to be a happy, carefree girl again, but because of what success will mean to humanity in general. But you must understand, dearest, that there is the risk of failure. I have to be fair with you on that point. In any event, Mason will no doubt kill me if I fail. I'm sure of that."

"I'll take my chance," she answered quietly. She added rather plaintively, "I suppose I can't have something to eat? My sides are nearly touching."

"All the better—and you can't have a bite," Douglas said firmly. "I'm a surgeon now, not your fiance. Well, here we are."

He ran the car into the big private garage, helped the girl out and guided her fumbling feet up the steps and so through the hall to the elevator. Once in his office he took her straight through to the surgery and settled down in a chair. The two nurses he had summoned caught his nod and one of them began to remove the girl's hat and coat.

While they prepared her for the operation, he went into his private office and stood for a moment with his fists clenched and his eyes tightly shut.

"All I ask is the strength of my hands, the infallibility of my instruments, and the judgment of posterity," he breathed. "Grant me that—no more."

His brief prayer over he straightened up and went back into the surgery. As he washed his hands and snapped on rubber gloves, the girl sank into unconsciousness under the anesthetic. He came to the table at last, stood looking down on the eyeless sockets, at the shaven scalp. Then he took the instrument the leading nurse handed to him, and began.

FOR an hour he labored—for two hours, struggling under the hot glare of the shadowless lamps. Now and again as he worked, he caught the astonished eyes of the nurses above their face masks as they saw him insert and connect the artificial eyes. He could see they were incredulous.

The eyeballs themselves he never touched. The platinum claws did the work, handling them as gently as if they were thistledown. Little by little he progressed, knitting the optic nerve to the appropriate portion of the brain, making new nerve connections, reknitting the blood vessels.

In two hours he was feeling tired but the work was done. The girl's skull had been restitched and the scar coated in fast healing astringents. She lay now in the soft air bed adjoining the surgery, a bandage round her head and eyes.

When he felt fit enough after his labors—towards two in the morning—Douglas crept in to look at her. The nurse was dozing in the chair by her side. The girl was breathing regularly. Her temperature and pulse were normal. Douglas gave the nurse a nudge and then went out again to his private office to sit down and await the dawn.

This time it was the nurse who awakened him. He got into his coat hurriedly and walked through to the bedroom. The girl was fully conscious again, and apparently in good spirits.

"Doug?" she asked quickly, recognizing his footsteps. "How am I getting on? I still can't see anything."

"You're not supposed to, dearest." He gripped her hands. "You are all bandaged up. But you're doing fine. Think yourself lucky you don't live in the Nineteen-thirties

or this operation would have taken months of convalescence. Surgery has upped a bit since then. How's your appetite?"

"Last night my sides were touching. Now they've stuck together. Do something, please."

"Okay. Nurse!"

The woman came in and Douglas gave his orders. He turned back to the girl.

"While you have your meal I'll freshen up a bit. Then we'll see how things are. By that time you should be able to stand it."

"It'll be all right, Doug. I know it will!"

He patted her hand and left her. He had hardly reached his office preparatory to getting a shave when he heard the door of the reception office being thumped good and hard. He went out to it and found Mason Brooks on the threshold, his face white with ill-controlled fury.

"Where's Vera?" he blazed, striding in. "She's here?"

"Yes, she's here," Douglas assented quietly, shutting the door. "And take it easy."

"Easy! That's a fine thing to tell me! I've been at work all night and I arrive home to find my sister has been absent the entire time, ever since you called for her last evening in your car. What the devil have you been doing? Where is she?"

"She's eating her breakfast at the moment. There's a nurse with her, and has been all night."

Douglas took off his coat leisurely and turned to the mirror. He had just picked up the electric razor when Brooks caught his arm and whirled him round.

"You can't treat this matter as of no consequence, Doug," he snapped, his eyes glittering. "You're hoping to make that experiment on Vera, in spite of all I've done to try and stop you."

"And in spite of your very ungallant efforts with the Ophthalmic Council," Douglas retorted. "I'm not making the experiment, Mason. I've already made it! I performed the operation last night and Vera still lives, and is well."

The physicist perspired visibly in sudden relief. He took off his hat and sank into a chair. Then he passed a hand over his smooth dark head.

"I'm—I'm sorry," he said agitatedly. "I got all worked up. It—it was for Vera's sake, of course."

"Of course." Douglas ran the razor down his jaw.

"Can she—see?" Brooks questioned abruptly.

"That I don't know yet, but we'll find out when she's had her breakfast."

There was silence between them for a while. Douglas finished his shaving and washing as the scientist thought things out.

"Better get a grip on yourself," Douglas suggested, half smiling. "Let's see how things are. Shall we?"

"Yes. Yes, of course."

MASON BROOKS went into the girl's room beside him. He stood looking at his sister fixedly, but said no word. Since he evidently did not wish to disclose his presence, Douglas did not do it for him. He dismissed the nurse and took hold of the girl's hand tightly.

"It's zero hour, Vera," he said tensely. "Are you ready?"

"Yes." Her voice was subdued. "I'm ready.

He reached behind her head, unfastened the clip to the eye bandage and began to unravel it. As the last shred fell away, Brooks could not help a little gasp of amazement at the sight of the beautiful eyes in the formerly dead sockets. They were big and gray, even prettier than the girl's own had been.

There was a long, deadly silence. Douglas could feel himself perspiring freely under the suspense. Brooks leaned very slightly forward his eyes sharpened to needle points.

Slowly the girl turned her bandaged head. She looked above, to either side of her. Then she fixed her eyes wonderingly on Douglas. He stared back fixedly—but to his astonishment she clapped her hands to her face.

"What?" he asked desperately, catching her shoulder. "Vera, what *is* it? What's wrong? Can't you see? You *must*, I tell you!"

"Yes—yes, I can see," she answered breathlessly, lowering her hands again. "I can see you—and Mace over there—and this room. I can see myself. But—but *I can see two things at once!* Nothing looks solid any more. I can see through the walls. There is a crazy looking landscape out there, weirdly vast. And some ruins of some sort—like cities. It's—it's *awful!*"

She covered her eyes again and Douglas stood looking at her in bewilderment.

"Brain reaction maybe," he muttered. "Hallucinations."

"More likely you've damaged her brain!" Brooks declared hotly, crossing the room. "Two things at once, man! Do you realize she's delirious?"

He caught Douglas' arm. The way the two men looked at each other was a prelude to blows. But the girl's voice stopped them.

"Fighting over it isn't going to do any good—and certainly not to me. Try behaving yourselves instead. Come here, both of you."

They hesitated a moment, then came to the bedside. Vera had lost that expression of alarm now and instead was looking more puzzled than anything else.

"At least I can see," she decided. "That is something for which I shall be eternally grateful, Doug. But you've got to do something about this double vision if you can. Maybe you made a mistake in the lenses. After all, it was your first attempt."

"Yes, it's possible," he admitted.

"Just what are your impressions?" Brooks asked, his anger cooling into interest. "Explain them in detail."

"Well, I can see as far as the walls of this room. Beyond them I can see New York spread out on all sides. In the midst of it, like a double exposure photograph, is some kind of landscape. It's deserted and seems to go on forever and forever. Same with the sky, too. No horizon. Endless—utterly endless."

The girl looked up at the ceiling, then jerked her eyes back again and blinked.

"The sun's up there. But it looks different. It's got curly things flickering round its edges and there's a blaze of white light behind it."

"Great Scott, the solar prominences and corona!" Brooks whispered incredulously. "Well—go on!"

"I can see through my own body," the girl went on. "But not into it, if you understand. And although I can see through these immediate walls, I cannot see through more distant ones. Yes, I can see through the floor, down through this building, into the underground railway and sewage system, then deep down into the earth. Like lying in mid-air over a colossal pit!"

Mason Brooks scowled in deep thought. First and foremost a physicist, the girl's impressions had arrested something in his mind. To Douglas, purely an oculist, the matter was alarming.

"We can't leave things like this," he decided. "Rest until this afternoon, Vera, and then you'll be fit to get up and dress. First thing I'll do is get you into the surgery and make an examination. Obviously you've got X-ray eyes. You shouldn't have them. I must have made a mistake somewhere in those lenses."

THE girl closed her eyes and gave a serene smile.

"There, that's better. Now I can't see anything at all."

"Did you say something about cities—ruins?" her brother asked presently.

She opened her eyes again and regarded him queerly. It was a rather unnerving stare she gave him, a perfect example of looking straight through him.

"Yes, I did," she assented. "They're behind you. It's mixed up with New York's buildings somehow. But there are ruins on a sort of rough plain."

"Hum!" Brooks said, and patted her shoulder. "Okay. You just close your eyes and take it easy. We'll discuss this later. And don't say anything to the nurse, either. You may have acquired a gift."

The girl shrugged and closed her eyes again. Douglas gave her a final puzzled look and followed Brooks from the room. The nurse went in and took over her duties again.

In the reception office the physicist rubbed his unshaven jaw thoughtfully.

"You're a man of optics, Douglas. What's your verdict?"

"I must have made an error in the formula somewhere. Or else synthetic material doesn't react like normal tissue. That's the only explanation. Given time I could probably right it. Or even the use of spectacles might cut out that distant superimposing wavelength, perhaps."

Brooks gave a grim smile.

"I've other ideas. I'm beginning to think that you have all unwittingly unlocked a closed door. My sister isn't looking through things, but into things. If she could see through things, in the fashion of X-rays, she would simply see all New York and the ground as though it were glass.

"But apparently she doesn't. Only at very short focus can she penetrate a wall. Beyond that, she sees an entire second landscape. Broken down cities, solar prominences and corona, a sky and plain which go on forever in a straight line. To me, as a physicist, that

hints at only one thing—the fourth dimension!"

"What!" Douglas yelped. "You're crazy, man."

"Maybe," Brooks shrugged. "But remember that the greatest discoveries of science are often the outcome of the sheerest accident. It's only a theory yet, and I've got to think about it." He glanced at his watch. "I'm going home for breakfast and a freshen up. I'll be back here this afternoon and we'll go into the thing properly."

He strode to the doorway, then half way through it he paused and looked back.

"Sorry I blew up." He grinned cynically. "Maybe this will have justified your work after all!"

CHAPTER IV

Dimensional Possibilities

BY MID-AFTERNOON the girl was quite able to be up and about. Douglas' examination satisfied him that the most modern of restoratives had done their work and that except for her peculiar eye trouble and the wig she was wearing until her hair grew again, she was about normal.

At three o'clock Brooks arrived, as immaculate and keen as if attending a science convention. From the expression on his leanly-cut face, he had been doing a good deal of thinking.

The girl herself was in difficulties, so she said. She seemed half afraid to walk about for fear she would fall through the floor. As she moved she dodged invisible objects at times. To the two men watching the effect was serio-comic.

"We'll see what's wrong anyway," Douglas decided, leading the way into the surgery. "Take a seat, Vera."

She sat down in the padded chair amidst the optical instruments and her brother stood with his hands in his trousers pockets, studying her. Douglas drew up the big ophthalmoscope and then switched off the lights.

"While we are in the dark, and before I start to examine you, what do you see?" he asked.

"I'm not in the dark," she answered surprisingly. "I can see a sunlighted plain all round me, very clearly within the square which is this darkened room. But beyond it, where the sun is shining on New York, the vision is doubled of course."

"This gets better as it goes on," Douglas muttered.

He switched on the minute probing beam of the ophthalmoscope and the spot of light settled on the girl's left pupil. Through the testing lens Douglas peered deep into the artificial eyes he had created, at the redness of the retina at the back, at the edges of the artificial pupil.

He then did the same for the other eye, increasing the light power until the girl complained that he was hurting her. Then he switched off and drew back the window shades.

"Every reaction perfect," he declared, baffled. "There is not the least reason why you should see two things at once. Everything ought to be normal."

She shrugged.

"I'm sorry, but it just isn't."

"And I'll tell you why," her brother said slowly. "I think, Doug, that the fault lies in the artificial cornea you've made—the front surface of the eye. Any oculist knows, or a layman too for that matter, that a fault in this clear membrane can produce queer effects. The most common is astigmatism.

"If the cornea is curved in different directions, the rays of light in different meridians can't be brought into focus on the retina except by an irregular strain on the muscles. Objects therefore look distorted and out of place. Now in this case you have an artificial cornea which might quite easily be several degrees out of true focus. The effect is not just a distortion, but an *ability* to collect light waves which no normal human eye can see.

"In a way then, you have provided Vera with a sixth sense. X-ray eyesight exists in some people—and they are usually on the stage or in sideshows—but this is something more. Something wonderful! It is the recovery of a sense we must all have possessed at some time in the past."

"How do you make that out?" Douglas demanded.

"By the fact that a human brain can still work unharmed with eyes like this attached to it. Since it does not cause any pain or damage, it proves it is a sense which is not—er—unaccustomed."

"All this talking may be interesting to you two experimenters, but I'm still living in a double exposure world," Vera objected. "I

want it put right."

"Let me finish, Sis." her brother insisted, going over to her. "I've been thinking about this business—thinking hard. Tell me something. As you move about does your vision of this other world alter too? As though you would perhaps have covered a certain distance in it?"

"Yes. I seem to cover the same distance there as I do here."

"Good! That means that that other world actually exists and is not just a figment of the mind. I believe that you are looking into nothing else but the fourth dimension. Remember that I have studied these things—planes of existence, interatomic spaces, and so forth."

"Fourth dimension!" Vera ejaculated, startled. "Good grief! But—but that's Time, isn't it? Or am I wrong?"

HER brother waved his hand.

"The fourth dimension is not Time," he assured her, shaking his sleek head. "In fact nobody knows exactly what it is, although there are numerous theories. As explained in geometry it is an infinite extension in length and breadth whereby both states are unbounded. There are no curves, as we see them. Eddington described it as Past, Present, Future, and Elsewhere. Think of it this way.

"A bus is moving at twenty-five miles an hour, forward. A man is going to the upper deck of that bus, upward, while the bus is going forward. Four states are involved. The man goes upward and forward simultaneously at differing ratios of speed, yet both occupy the same instant in time and space. That's an everyday conception of the fourth dimension."

"Then it's too much for me!" Vera declared flatly.

"Well, it's not surprising," Brooks shrugged. "Anyway, this land you see must lie right in this very space we occupy, but nobody has ever seen it before because they have not had the eyes with which to do it. It is not an impossible thing.

"Matter, as we know it, is mainly composed of empty space. Unless we accept that Nature is incredibly wasteful with her material we have to admit that there must be other planes—or one other plane, the fourth dimension—lying in the empty space between. That is, in the space interstices between atomic systems. From what you can see I begin to think the matter is no longer in doubt."

"Then where does all this get us?" Douglas asked.

"We may be at the beginning of an amazing trail," Brooks said slowly. "For years I have experimented with solids into solids, as you know, and now because of a fluke in these artificial eyes you've given this scatter-brained sister of mine the power to see into the very spaces which I have tried to penetrate. From now on our journey is into pure science."

"Then—then don't I get my eyes put right?" the girl asked anxiously.

"Not until you have been of immeasurable service, anyway," Brooks answered. "You've been a pretty useless member of the community up to now, but here's your supreme chance to advance science." He took her arm as she got up from the chair. "Now, you spoke of a ruined city. How far away is it?"

She turned and looked towards the door side of the surgery wall.

"Over there, about two miles. Why?"

"You are going there to examine it."

"Oh! How?"

"I'll show you. Come on."

She put on her hat and coat and between both men was led downstairs and into the street. Here, amidst the people on the sidewalk and the swirl and bluster of traffic she drew back nervously.

"I daren't go forward!" she insisted, frightened. "It's all too horribly confusing!"

"You're all right," her brother told her calmly. "Close your eyes if you can't stand it. Now, where are the ruins?"

"Behind that stereo-theater over there."

"Good! Shut your eyes and hang on."

In this manner she was escorted across the street until they came behind the stereo-theater. Here was a stretch of wasteland under option for future building.

"How now?" Brooks asked eagerly.

The girl looked about her.

"Much nearer," she announced. "We are apparently floating half way up a small hillside and the city is a bit further on, on the flat plain at the top of the hill—that way."

They followed the direction she gave and finished up in one of New York's expansive parks. Here there were open grounds and trees aplenty.

"I'm amidst the ruins now," the girl said, as she looked round on the trees and the

distant people seated on benches. "There are the remains of buildings here, crumbled into masonry."

"Can you touch this masonry?" Brooks asked, thinking.

She waved a hand in the air before her.

"No. My hand goes through it."

"Which shows you are still in three dimensions as much as Doug and I are. We are standing on this ground in this plane. That is why, to you, we seem to float in midair on the other side. Okay, you see ruined buildings. Anything else?"

VERA shuddered.

"It all seems to go for such a long way," the girl answered, awe-stricken. "Endless expanse. These city ruins extend over a tremendous distance—nearly as much as New York itself. It might take me months to explore it all. And remember that I can't go through walls or doors. Though I can see the outside of ruins I cannot see into them, unless one wall be down."

"I realize that." Brooks nodded. "Anyway, you have come across some immense scientific secret of which we have never known, and which no other person but you can even see. What we do now is to keep beside you while you explore. If you find anything at all important, describe it in detail."

Vera nodded rather mystifiedly and walked forward. And it was the beginning of daily visits to the park. By degrees Vera forced herself to become accustomed to her disturbing dual sight and finally was able to move about, when necessary, without an escort. To the outer world, and the press, for the newspapers were hot on her track, she pretended to be half blind and slowly recovering from an operation.

Those were her brother's orders, and they certainly killed Douglas Ashfield's practise stone dead. The Ophthalmic Council struck him forthwith from the register. But he was not embittered. The wonder of the thing he had fortuitously created fascinated him.

Every dinnertime, every afternoon, or in the light evening, Vera walked in the park with her brother and Douglas, always in some different area of it. The beauty of the investigation was that nobody knew what they were up to. It simply looked, to keen newshounds, as though the unfortunate blind heiress was taking her usual constitutional.

Then, three months later, in which time the girl had about covered every foot of that enormous, deserted other-world city, she made a discovery. Amidst the crumbled walls of one huge building were machines, so perfectly made and of such indestructible material that they were still useable—if only they could be reached.

"Describe them," Brooks insisted, when he first heard her mention the machines. "In absolute detail. I'll fit in the parts you don't understand."

So Vera did her best. She was by no means lucid, being utterly ignorant of science in general and machinery in particular. But by interrogating her closely and insisting on the smallest intricacy, her brother built up over the weeks an exact outline of the particular machine she was describing.

Through the autumn and winter they were on the job, to the occasional surprise of the newshounds, and at length when the following spring came, Brooks decided that the walks were no longer necessary. In his own laboratory, rebuilt in its entirety after the disaster of the preceding year, he explained why.

"I think it may be possible to enter this plane, this fourth dimension, with our physical bodies," he said. "Then we can see for ourselves just what is going on."

"Sounds like a big assumption to me," Douglas commented.

"And even if we could go there, there is nothing to see," Vera said with a shrug. "I've told you it's flat and uninteresting, with a lot of scattered ruins."

"Listen to me," the scientist's sharp voice interrupted her. "You have described to me machines which could only have been made by a master race. The very nature of the machines and the invulnerable atomic structure comprising them proves that. If—as seems likely—a master race lived and died in a plane so close to us, it is essential to science that we find out everything about them.

"You have been very helpful in describing the machines to me, and one of them—which I made you concentrate on exclusively—is undoubtedly electronic in basis. I've worked out the details from the facts you gave me and have reproduced the machine here. Take a look at it. Is it like the one you described?"

The girl studied it, wishing there was not that irritating background of land and crazy

sky surrounding it.

"Near as I can remember, yes," she assented.

"Good! Now I'll tell you what it is. It's very similar to my own conception of matter-into-matter, only it possesses many refinements borrowed from that other-world design. With my knowledge of my own invention, helped by the essential details of this one, I've produced a device which should carry us into that plane. Here is how:

"Between us and it, there exists only one barrier, that of vibration. If it were a solid barrier, light waves could not pass through it and Vera would not be able to see the things she does. So, since we cannot touch anything in that plane while we are in this one, it shows that our bodies—and the material things about us—are not attuned to the same rate of vibration. Anybody knows that we can only encounter things on our own scale of vibration, just the same as we can only hear things in a certain range of wavelength."

THE scientist took a deep breath and smiled at them.

"This machine, duplicated from the one Vera has described, alters the vibration of the body. It should, as I see it, cause us to fade from sight in this three-dimensioned world and become attuned instead to the vibrations of the other one, just as a piece of ice melts from one form of solidity and partakes of the molecular state of water. Do you understand?"

"I think I do," Douglas answered. "But it seems to involve a high degree of risk."

"I don't think so," Brooks answered. "This time it is not a case of a solid into a solid, but of three solids into comparatively thin air. Certainly I am going to risk it, and I'm hoping you two will do likewise."

"Now?" the girl asked, startled.

"Well, say tomorrow morning. That will give us the rest of to-day to tidy up our business affairs and have a good night's rest. I have a vacation due me, so I can manage it."

"And my time's my own since my practise went to the bad," Douglas sighed.

Vera was silent. Brooks' face grew impatient.

"Confound it all, what is there to hesitate at in such an opportunity?" he demanded. "We're going to attempt something nobody ever attempted before. It's science that must progress, no matter what our puny bodies suffer in consequence. It won't be dangerous. Just unusual."

"Unusual is right!" Vera murmured. She shrugged. "All right, I'll risk it. I've played with death many a time in a jet plane and a V-sixteen so this may be something new. How about you, Doug?"

"You don't think I'm going to lose my hold on you?" he said with a smile. "I'm staying beside you until your eyes can be put right and we can be married. Incidentally I'm working on that eye formula. I intend to find what produced the flaw, no matter what happens."

"The flaw mustn't be corrected yet," Brooks said. "Well, you'll come?"

"Tomorrow morning it is," Douglas agreed.

CHAPTER V

Wonderland

PROMPTLY at ten the following morning, their various affairs in order for an indefinite time, the three met again in Brooks' laboratory. He was looking as alert as usual, full of confidence that his experiment would be successful.

"Just one thing I should mention," he said, as he switched on the dynamos. "This machine will keep us in that other plane as long as the vibratory effect lasts. That is to say, the moment we arrive there our vibratory rate will start to slow down imperceptibly as the atoms change their set-up in our bodies. The effect of the machine upon us will not be a permanent state. Like a charged battery we'll begin running down, and when the effect has altogether faded—when the electric change of atoms has reverted to normal—we'll find ourselves back in our own plane here. As near as I can calculate, it should be two or three hours before we return."

"Suppose we snap back under a lake or a truck?" Vera asked.

"With your eyes to see in two places at once? I think not. You'll be our infallible guide."

"Suppose I lose my dual vision when I get there?"

"I don't think that'll happen," Brooks answered. "We'll soon see, anyhow. As for other details—here are three packs of pro-

visions and small arms. Put one each on your backs. Finally, I have locked the laboratory door and nobody can enter until summoned by me. That makes us safe. Now —are you ready?"

The girl and Douglas nodded. Stepping into the metal-plated area of the machine, directly under two long bar-magnets, they watched the next procedure. Brooks joined them and reached out to a switch. Immediately the power from the magnetic devices overhead made itself felt. It was the oddest feeling. Not painful exactly, but more like a tremendous stretching and elongation.

Before the eyes of both men, the laboratory began to shift crazily and seemed smeared in spirals and circles of black. To the girl no such evidence was present, but she could feel an intense dizziness trying to overcome her. Gazing as she was into two places simultaneously, and with an apparent void now yawning under her feet, the effect was nearly unbearable.

Then, for the two men at least, there came a feeling of enormous bouyancy. At the same instant the laboratory snuffed out like a candle flame and they felt themselves reeling backward.

Darkness. Then a blaze of light.

It took Douglas several seconds to realize that he was lying flat on his back on hard ground, staring up at a dull blue sky in which stars and sun sailed together.

And what a sun!

Apart from its heat and brilliance, it was oddly crazy. It bulged forwards somehow—a flaming oval instead of a circle, edged with flaring, twisting prominences while, behind it into space, streamed the ghostly beauty of the corona.

Slowly he got up, dazzled by his glimpse of the orb of day. He slipped a hand under Vera's arm and helped her rise too. Brooks raised himself to his knees, gazed round, then straightened slowly to his feet.

"Apparently we did it," Douglas observed, in an awe-struck voice.

The physicist didn't answer. For the moment he was as astounded as Douglas by the sight of this strange land into which they had come.

They were standing on a flat and dusty plain, cracked here and there in irregular lines as though moisture was the very rarest occurrence. The plain, broken at intervals by a low lying range of hills, just went on and on until it was lost in incredible distance.

There was a horizon, perhaps. But it was so remotely far away—a mere smudge joined by the deep blue sky—that the flat sky and the earth never did seem to meet. In every direction this condition was the same and, so far as the two men were concerned, there was not the vaguest suggestion of the three-dimensional plane from which they had come.

In the immediate foreground were the city ruins the girl had mentioned, showing their presence by the shells of once superb buildings, broken columns of stone, cracked and crumbling terraces. It had been very lovely here—once.

The air was windless and warm. In fact there did not seem to be any atmospheric disturbance at all. A silence reigned, a silence so overwhelming that it filled them with vague fears. Not a cry of a bird, the rumble of traffic from any city, or the roar of a waterfall came to their ears. Just the deadly all embracing calm prevailed there, in the glare of that preposterous sun. It made all three feel strangely insignificant.

BROOKS found his voice at last and turned to his sister.

"How's your vision now?"

"Just as it was," she answered. "The only difference now is that New York is superimposed on top of this, instead of things being the other way round. We are standing in a space just outside the laboratory, by the way."

Brooks shaded his eyes and glanced at the sun. Again he surveyed the infinity of landscape.

"Definitely the fourth dimension!" he decided at length. "It explains much. Science has always believed that we humans had a precious tiny segment of earth upon which to live considering our prolificacy."

"I've read about the fourth dimension, of course, but things here don't seem to match up," Douglas remarked, thinking. "I've always thought we ought to be able to see around corners, experience wonderful changes in Time, and so on. All we can see is a rather fantastic interpretation of three dimensions."

"That's to be expected," the physicist answered laconically. "We are not four-dimensional people, don't forget! Embedded in our brains is a long heritage of three-dimensional surroundings. Unless we achieve

four-dimensional sight and senses to match, the only changes apparent to us, are the infinite extension of length, this landscape, and the removal of certain flaws in light waves. If we were really four-dimensional we would no doubt see many other wonders."

Brooks glanced at his watch and Douglas and the girl looked at theirs.

"How about taking a proper look at those machines I saw?" Vera suggested. "I can take you straight to them."

Brooks was about to answer when Douglas suddenly called attention to a curious phenomenon eastwards.

"I may be wrong," he said, studying it, "but it looks to me as though part of the landscape has dropped out!"

Brooks stared also. Because of her double vision Vera did not concentrate on the task. Finally her brother nodded.

"Something queer all right," he agreed. "But it isn't a piece missing out of the landscape. It's water! A sea! Stretching away right to infinity and reflecting the stars so perfectly it looks as though the very nature of things has dropped away. The dividing line between sea and sky can't be detected. Come on. Let's examine it now and view the machines later."

They began to move towards it—and re-received their first four-dimensional shock. In five minutes, though the sea had appeared to be at least twenty miles away, they had reached its shore! The smallest of wavelets lapped on the silent, dusty sand which in turn joined up with the dry, cracked landscape.

"Tidal, anyway," Brooks commented, staring along the shore line. See the mark where it reached last time?"

"It's something to hear a sound other than ourselves," Vera whispered. "There's something about this great, empty, infinite land which is terrifying. It's alien. Weird!"

"What puzzles me is how the devil we covered such a distance in five minutes," Douglas observed, frowning. "Vera, you can judge how far we've moved by being able to see New York. What distance would you say we've covered from our starting point?"

"About a mile. But in this place it did look like twenty."

"Only one of the many things we may find odd here," Brooks reflected. "Light waves are probably responsible. Distance in our own plane is judged by light waves, of course, and in three dimensions at least their velocity is fixed at one hundred and eighty-six thousand miles a second.

"Go faster than that and according to Fitzgerald's Contraction a minus quanity is produced. Here, apparently, light waves move far faster than that. It is conceded by science that light waves might have no fixed velocity when operating in four dimensions, and the same law applies to the critical speed of matter.

"Anyway we are here, having literally covered twenty miles in five minutes. Inertia, speed, space, Time—they're all haywire in this place."

HE BECAME silent again and the unearthly calm returned, broken only by the suck of waves in the flowing tide. The sun had moved visibly across the deep blue heaven since they had arrived and was still traveling westwards. After a while Vera gave a sudden cry and pointed towards a spot apparently two miles away.

"Is it the sunlight, my eyes, or am I just plain crazy?" she asked. "Can that be the hulk of a ship?"

The two men turned, startled at such an implication. But it was not the girl's double vision playing her false. There was something there, catching the sun's rays. It looked like rotten timbers and the masts of a wrecked schooner.

"This is worth looking at," Douglas ejaculated. "Come on."

He hurried forward and, to the amazement of Brooks and the girl a yard or two behind him, he became, apparently, remote in a couple of strides. When they finally caught up with him he was beside the wreck. They had to pull up short to save bumping into him.

"Going to take us a bit of time to get used to this light wave variation," Brooks said. He stopped talking as his interest centered in the half-buried ship.

Obviously it had been here for many years—but the apparent lack of elemental fury in this dimension had prevented it from losing much of its original form. Stout timbers were still recognizable, though warped in places from their nails. The masts had collapsed half across the deck amidst chipped and rotting canvas sails. The entire ship lay on her side, half of her mast buried in the sand.

"*Kobenhavn,*" Vera said, shading her eyes and peering up at the prow. "I can just make it out, if it means anything."

"Queer name," Douglas answered, prowling in the sand and peering at the age old timbers. "This ship's pretty ancient, too. A four-masted schooner, I'd say. They went out of fashion ages ago. But how the devil did it ever get into this plane?"

He turned, his question aimed at Brooks. But to his surprise the physicist had joined Vera and was staring up at the nearly obliterated name on the bows. Gradually an astounded expression came over his face.

"The *Kobenhavn!* Of course!" He snapped his fingers. "It's Danish, one of the famous missing ships on Lloyd's list! What were the facts now?"

He frowned as he reflected, staring at the sand.

"As near as I can recall she was last seen close to the island of Tristan da Cunha on January twenty-first, Nineteen twenty-nine. It was seen by the people of that island. After that she was never heard of again and there were no storms or accidents to account for her disappearance. She just vanished."

"And turned up here?" Vera asked incredulously. "It's impossible!"

"It's not impossible because it's here," Brooks replied, with cold logic. "Say, this begins to open a field. There are lots of missing ships in the archives of Lloyd's—the *Cyclops,* the *Eltham,* the mystery of the *Marie Celeste* crew, never satisfactorily cleared up.

"Then we have vanished airplanes which have gone into the unknown when over oceans. Amelia Earhart, for instance. Then there have been ghost ships at sea where one ship has passed through another if we are to believe the famous legend of the *Flying Dutchman.* That effect could be produced by the mariners of the third dimension somehow being able to see a ship floating on a sea in the fourth dimension—this sea perhaps. I must think this out carefully."

"We might find something yet remaining in the cabins of this wreck," Douglas suggested. "The ship's in fair order despite some forty years of time ravage. Let's take a look."

Brooks nodded promptly and Douglas led the way carefully up the creaking, and in places rotten timbers. They had no easy job, but finally they did reach the sloping deck. Vera climbed up behind them and they assisted her along the steeply slanting surface to the nearest companionway.

The steps had practically rotted away and the door at the bottom was missing. By dint of lowering themselves carefully they got down without mishap and, as they had guessed, found themselves in the captain's cabin.

IT WAS untidy, the captains' cabin, but nothing more than that. The grand old seasoned timbers had withstood the test of years well. The cabin would have been orderly if it had been upright. As it was, the table lay overturned in a corner. The drawers had spewed from a rack in the wall while cupboard doors had flown open. The most natural thing of all was a still untarnished brass hurricane-lamp standing upright in its universal socket.

"This is uncanny!" Vera breathed, breaking the dreadful silence. "I feel as though we're exploring beyond death!"

"Put that way, we are," Brooks shrugged, scientific as ever. "No time to be squeamish. There ought to be a log somewhere. Ah! What's this?"

He dragged the heavy table on one side and from underneath where it had been rescued a heavy, dusty volume bound in black leather, its pages beginning to yellow at the edges. With some effort he balanced it on his knee and turned crackling pages.

"Log all right!" Douglas exclaimed eagerly, peering with Vera over his shoulders. "What does it say?"

"Give me time, man!"

Brooks flipped the pages. Up to January 21st 1929 the entries were quite normal. The ship had obviously been carrying a crew of fifty naval cadets. On January 21st came the most surprising and significant entry of all:

January 21—Cannot understand how we have gone off course during the night. The stars are different and the compass refuses to behave itself. In fact all the electrical apparatus is behaving erratically.

January 22—We have drifted on to a strange ocean. It is quite uncharted. Horizon vastly extended. Sun and stars shine together. No sign of land.

January 23—The men have mutinied! Supplies cannot last forever. There seems to be no explanation—

The entries stopped abruptly with a streak of the pen. Brooks closed the book slowly,

then stood up with it under his arm.

"Somehow this ship passed into the fourth dimension while sailing, without the benefit of apparatus at that," he said. "From that premise we may assume that all other lost ships have probably done likewise. Planes too have usually vanished when over great bodies of water. Of course, we know that the vibratory rate is responsible for the transition from plane to plane, and we know too that water is a perfect conductor of all things electrical. I'm not sure of my ground here, but is it not possible—in the fashion that lightning strikes as a rule where it can find water? By the same token, perhaps over great oceans which must definitely attract the myriad and one vibrations and currents always streaming down through the atmosphere, there may exist at times an area, movable maybe, wherein the vibratory rate is different?

"A small thing like a ship might therefore float into one of these pockets—as might an airplane—and never get back, the current being powerful enough to shift the atomic makeup from one rate of vibration to another for all time?"

"Yes, I think it is the only possible theory. Oceans at best are mysterious, full of the unexplained. Strange lights are seen in them, St. Elmo's fire plays on the masts, weird electrical upheavals are common."

Brooks sighed and stuck the book more firmly under his arm.

"Right or wrong, it's the only theory I can find. We're taking this book back home with us as proof. Now we'd better get outside again."

CHAPTER VI

The Voice

RETURNING to the broken companionway they fought their way up to the deck again. It was just as they reached it that night descended with the suddenness of a fused lamp.

"Hang it!" Brooks exclaimed from the dark. "Can't be a scrap of refraction in this blasted plane. The light wave quirks are too thorough for my liking. You okay, Vera?"

"Okay," she assented, rather drily. "I had the chance to practise being in the dark recently, remember. It's night in New York too," she added. "I can see the city lights."

"Wish I could," Douglas sighed wistfully. "Be a comfort in this forsaken land."

They found their way along the deck and so back to the beach again. Here Douglas' voice floated out of the void in sudden alarm.

"Say, it's night! Do you realize that?" We started on this trip at ten in the morning and we've hardly done anything yet. Now it's dark. That means that at least seven or eight hours have passed. I thought our vibratory visit was set for only two or three hours, Mason?"

"It was," the physicist answered, with a trace of uneasiness. "But then, how is one to judge? Time, space, our very bodies are different. For instance, if seven hours or so *have* gone by we ought to be hungry and thirsty, but we're not. At least I'm not. How about you two?"

Douglas and Vera were surprised to find that they were not hungry either, and said so.

"Consumption of energy—bodily energy—must be different while we work at a new ratio, and therefore doesn't need replenishing as fast," Brooks mused.

"You have an answer in science for everything, haven't you?" Vera asked irritably. "Personally, this place is beginning to scare me. I feel we are so horribly, completely alone. I can at least see into our own world, but it is only a shadowy plane which I can't touch. I feel utterly cut off. For you two it must be even worse because you can only see this awful landscape. Mace, are you sure we'll get back?" she asked anxiously.

"Yes. Yes, of course," he retorted. "Mathematics prove it."

"Mathematics! Last time you dabbled in math you forgot something. Remember? That machine?"

"For heaven's sake stop worrying me," he growled. "We'll be all right. Come on, let's walk. Standing here in this silence with that old ship near to us is tearing my nerves to rags."

He turned and began to move. Douglas and the girl kept pace with him. They didn't talk any further. They felt too overwhelmed. They heard only the sound of those wavelets on the shore and the noise of their own feet crunching in sand. Not a vestige of a breeze, not the vaguest hint of

life was brought to them. The aching, endless quiet and nothing more.

Then, with a rather surprising suddenness, their way was lighted by the full moon. It came over the incredibly distant horizon so rapidly they could see it moving. It looked utterly unlike the moon to which they were accustomed, for it bulged like a mammoth silver egg.

"For some reason or other this plane gives you stereoscopic vision when you look at the sky," Brooks murmured, staring up. "Light waves again, I guess. But at least things up there are more or less normal. The moon is in her right place and in her right phase. Stars are differently placed, though, and—*hmm,* that's odd!"

He broke off and stared wonderingly.

"What?" Douglas questioned.

For several minutes Brooks peered at the sky, before speaking again.

"That planet is Mars, and that one is Venus —low down there. But they look different. For one thing Mars has no red glimmer, and Venus has lost a good deal of her high albedo."

"Albedo?" Vera repeated.

"Light reflecting quality!" Brooks showed impatience at her ignorance. "Now just why should they look different?"

"Maybe they're not the right planets," Douglas suggested.

The physicist meditated for a moment or two, and then he caught hold of his sister's arm.

"Vera, how does the sky look to you?"

"Normal, praise be," she answered. "Though there are some new stars I can't account for, peculiar to this plane maybe. But the rest of the sky looks normal. Still it was the same way when I looked at it from New York."

BROOKS smiled with gratification.

"Which shows the sky is identical in both places!" he declared in satisfaction. "Good! Then we have got Venus and Mars there, and they are different!"

"I'm more interested in returning home," Vera sighed. "The time keeps going on and we show no signs of getting back."

"We will!" Brooks seemed quite unconcerned. "Think of the amazing things we're discovering and try to use your brains a little."

The girl said nothing as they continued walking. Obviously his intense scientific interest in everything had blunted all his humane feelings.

It was perhaps half an hour later, as near as they could tell with time and distance so inexplicable, when they found themselves in the regions of the ruined city. It stood a pale and crumbled monument to vanished endeavor.

"Plenty of buildings still standing," Brooks commented, glancing around in the pallid moonlight. "Roofs are gone and the walls look sick, but we can perhaps take a quick survey."

"We ought to feel sleepy," Vera said, oddly. "But we don't."

"And until we do we'll keep going," Brooks decided. "Let's see what we've got in here."

He led the way across crumbled stonework to the nearest half-demolished edifice and pushed on the massive metal door. Under the pressure it collapsed almost immediately, not because the lock had perished, but because the supporting stonework fell to the ground.

Beyond was a vision—an amazing vision, lighted by the moon shining through the clear space where the roof had once been. There was the shell of an immensely long building, the walls towering up to perhaps a hundred feet, the metal shields still in place across the open spaces where windows had been. It was only by degrees that the trio realized that there were machines here, covered in the dust and chippings from the fallen roof.

"This the machine hall you saw from our plane, Vera?" Brooks inquired, surveying it.

"No. In any case it can't be. I couldn't see through walls, remember. The place I saw was a total ruin. This is another one entirely."

"Interesting, too, unless I miss my guess," the physicist muttered.

He stepped across to the nearest machinery and stood looking at it. Finally he knocked the dust from it with his haversack and looked more closely.

"Some kind of power generator, near as I can tell," he commented finally. "Light isn't too good. You two take a look around and see what you can find."

They went off together and thereupon Brooks proceeded to forget all about them. His scientist's soul was lost in the contemplation of these gigantic scientific engineering wonders wrought by a race of people

now utterly vanished.

Brooks found all kinds of conjectures passing through his mind as he went from machine to machine and pondered upon their diversity and complexity. Who had done all this? Four-dimensional beings? Were they perhaps present and yet invisible? Somehow, though, this theory did not seem to fit.

By degrees, as Douglas and the girl explored the further regions of the hall, Brooks kept discovering huge dynamos of queer outline, transformers, great banks of resistances, all manner of electrical equipment of a high order, together with many things he did not understand at all.

Gradually it became clear to him that every one of them was so designed as to face a truly enormous creation like a tower rearing up to the sky from the very center of the hall. At the top of it, glinting in the moonlight, there appeared to be a massive sphere.

He frowned, an astonishing thought crossing his mind. There seemed to be no connection from one machine to another, yet each machine faced this tower. Surely not by coincidence? Perhaps transmission of power through radiation? Akin to radio? It was the dream of engineers in his own plane. Here, maybe, it had been accomplished. But the idea demanded a huge step from conjecture to proof. He'd need the daylight to make sure, anyway.

He was studying the tower pensively when he turned and looked round for his sister and Douglas, intent on getting their opinions. To his surprise they had vanished, but almost immediately he saw where. A door was leading into another hall beyond this one.

TURNING, he strode towards it, entered yet another roofless building and beheld massive long disused telescopic equipment soaring towards the skeleton of a dome which had once been covered. He had hardly time to take in the fact that he was in a kind of observatory before an incredible feeling stole over him. At the same moment Douglas and Vera, quite nearby, must have felt it too for they half turned in alarm, then stood motionless.

It was an intense feeling of constriction, of being forced into involuntary paralysis. For a moment Brooks suspected that they were about to be returned to their own plane and hugged the *Kobenhavn* log the tighter to him in readiness. Then he realized that the sensation had no kinship to that overdue metamorphosis. Instead it was an iron rigidity which settled. Neither he, Douglas, nor Vera could budge an inch.

Then, as they waited tensely, they heard something. It was like a voice, and yet it was not a voice. It made no actual sound in the deserted spaces. Instead it crept into the senses and made itself understood as supertelepathy.

"You have crossed the electric eyes, my friends, and now you are to experience the unforgettable! Your ability to be here in this plane makes you worthy of it. Prepare yourselves for an explanation."

Every word, every thought impulse—since that was what it really was—was utterly distinct. Vaguely, Brooks understood. He, or his sister and Douglas, had crossed an invisible radiation somehow generated even after all else had stopped. It had set hidden scientific powers working. Telepathy. The absolute grip of mind and muscle. No matter how much they might have wished otherwise they were compelled to obey the science of a race long gone.

Slowly a sense of being lifted out of themselves stole upon them. They were compelled not only to see events but to feel that they were a part of them. And yet, paradoxically, they were distinct and separated from the actual moment by untold ages.

CHAPTER VII

Vision of the Past

GRADUALLY things grew dark—even for Vera with her double vision. She would have cried out in terror only her muscles refused to work. Brooks, the most scientific, surmised what was happening, that their brains were being deliberately blacked out to everything except the impressions which were shortly to reach them.

For a while there was nothing. He was standing, like Douglas and Vera, utterly motionless staring into a void. There was no sound either. Even the four dimensional plane itself had not seemed so utterly quiet as this. It was death in life.

Then again that Voice which spoke in pure thought, which was clearly understandable.

"You cannot attempt to understand what

you have seen around you. Not yet. But if you ever do you will have earned the right to possess the heritage we have left you. What you are about to experience is purely a record of events left in readiness for the day when you outcast people of the Third Plane would find your way back to your real heritage.

"We realize that in the very act of finding your way back you have proved yourselves scientific enough to understand at least some of the mighty heritage which is yours. I am not a man, not even a Voice, but a mentally recorded series of thoughts transmitted by a machine, the deep complexities of which you may one day understand. Now, by sensory preception you shall have an explanation."

Suddenly the darkness was relieved and the paralyzed three gazed in wonder on a scene in which they seemed to be involved. They were looking into a gigantic hall of stone, is arched roof supported by pillars, its windows wide and giving onto a view of the eternal landscape so peculiar to this plane.

It was brilliantly lighted by both sunshine outside and concealed lighting inside. The three were apparently at the rear of the hall, looking over the heads of a multitude of seated people. They were people just like themselves, except for one thing. They had queerly fashioned eyes. Instead of a pupil and iris there was an organ made up of four facets!

The people consisted of both men and women, serious-faced, all of them strangely attired in the briefest of costumes and looking towards the far end of the mighty hall where four men and women—again with faceted eyes—were seated on a raised dais looking down on a separate crowd of people numbering maybe a thousand.

It was a fantastic vision indeed and so utterly real that it was hard to credit that it was only an incredibly accurate sensory impression of an event in long forgotten Time.

Thoughts which sounded like voices floated across the huge expanse.

"You men and women, led by Agra Libaflis, have been found guilty of the charges brought against you. The chief charge is that of subversive activity against the State and Conclave of Scientists. One thousand of you have been found guilty, and by the law each and every one of you must suffer the same fate as your leader, Agra Libaflis."

There was an unearthly silence for a while.

"Long ago such activity was punishable by death," the message went on. "But science decided that such a law was barbaric and served no useful purpose. It fails to train the criminal mind to right itself. In its place banishment was substituted, usually to some far part of our world. We, too, have decided on banishment for you, but one of such utter completeness that you can never return, no matter how much you may wish to do so. For the crime of trying to overthrow Science no punishment can be too stern.

"We, the Supreme Judges of the Scientists, have decided that the entire thousand of you shall be banished to the Third Plane. We know that it exists as a material segment of our infinitely vaster world, a kind of desert island of matter. In the Third Plane you will be shorn of all the powers you possess here. Freedom of movement will be limited. You will find your world very small indeed.

"When you enter it, it will be without human life. From what you know of science you can try and build anew, start a fresh race indeed, if you wish, since there are women among you, some of you already mated.

"But to be sure that you can never return here, your eyes will be stripped of their outer lenses, that wonderful work of Nature which enables us to see in four dimensions! You will, as it were, become four-dimensionally blind, able only to see in three dimensions. Amongst the women of you, further operations will be made to ensure that whatever children there may be will, likewise, possess no trace of the eyes you have here. That is all!"

THE SCENE faded, to be presently replaced by another view of a long operating theater. Since the surgeons and tables, with the victims thereon, seemed to recede to infinity, it seemed as if the entire condemned thousand were present here, undergoing the eye and—in the case of the females—the internal operations of which the Judge had spoken. It was a vision that lasted only briefly, to be replaced by a scene in a titanic hall of machines.

Here again the thousand were present, within the area of a huge magnetic instrument. Brooks, staring at it, realized it was

a gigantic edition of the very machine he himself had made from Vera's description. Perhaps it was the identical machine itself.

Douglas, for his part, was not so interested in the machinery as in the eyes of the banished ones. He studied them as closely as he could. Then, slowly, the great crowd of people began to melt and finally disappeared. The laboratory was empty.

Very gradually blackness returned, and with it the Voice.

"You have witnessed what happened, my friend—how the remote ancestors of your Three-Dimensional Plane came into being. But for their transgressions there would never have been a populated Three-Dimensional Plane.

"You know that there is since you have come from it. By rights your heritage is this world of four dimensions, which you can never fully appreciate until your eyes achieve again the four-dimensional power they should rightly possess.

"We surmised that, as time went on, humbled remote descendants of the Banished might find their way back here. For that reason we decided to leave them these machines and the chance to begin again. Master these machines, behave as true scientists, and you can begin again.

"We, by the very law of evolution, have advanced so far up the scale that we no longer need machines and so shall depart this planet. You have seen, my friends. Now you must reason—deeply!"

The Voice stopped and the awful blackness gradually became tinged with gray. Slowly, like a veil lifting, the obscurity gave way to the ruined observatory again with its cold moonlight. All trace or sign of the vision of the past had gone.

By degrees the paralysis abated, and finally ceased.

Brooks moved stiffly, clutched his log book again. He went over to where his sister and Douglas were rubbing their aching limbs painfully.

"Did that really happen?" the girl whispered. "Or was it just a dream?"

"No, it happened. We have to realize that we are dealing with stupendous scientific power in this place. So much was explained in those few brief scenes, practically the whole history of the human race in fact. Or didn't you comprehend that?"

"I understand one thing," Douglas said. "In regard to that eye operation, I mean. The normal four-dimensional eye is made up of four facets, whereas ours is only a single lens. After the Thousand had been operated upon, their eyes looked like ours. Only they had a large fleshy piece left in the nasal corner where the four-dimensional surface lens had been cut away.

"According to the science of optics, that fleshy bit—which every human being has to day in the nasal corner of eye, but which of course has shrunk a good deal in the course of time—belongs to a time when we were saurians and had to have an extra membrane for underwater work.* Most biologists believe that.

"It's called the *plica semi-lunaris,* by the way, and sometimes 'the third eyelid.' What I know now is that it never had anything to do with a saurian ancestry but with a four-dimensional one. The missing section must have been present in the children of the Banished, and so on down through the ages to to day."

"Good!" Brooks complimented him. "Very good. That part of the revelation being optical you would of course grasp fully—but did you understand anything else?"

"Not clearly," Douglas confessed, and Vera beside him shook her head in the moonlight.

"To me," it explains everything in our history that needs explaining," the physicist said. "It shows that there is no real connection between man and ape. The two are distinct breeds. Human beings were placed in our plane from here, when apes were no doubt the normal form of life, the kind of life that should inhabit the cramped confines of three dimensions. That is why the Missing Link has never been found. It explains too the marvelous science of the early races."

FOR a second or two Brooks paused, to allow his listeners to absorb these facts. "Fresh from the wondrous science of this plane the original Thousand would build mighty cities and use wonderful science, but by degrees—with each fresh stage of evolution—knowledge, cut off from the source and their four-dimensional outlook destroyed, which would be bound to affect them adversely, physically and mentally—would begin to fade until at last the people became almost debased. Then, slowly, they began the upward swing again and so evolved to

*Yonge's *A.B.C. of Biology*. Chapter 4. 1984 Edition.

the present day with the real history lost in the mists of antiquity, or at the most mere garbled legend.

"Now we know why there are cities of surpassing wonder in the Sahara regions, why El Dorado must really have existed, why there must actually have been an Atlantis, withal overwhelmed by a catastrophe. They were the cities of the Thousand, and we are their successors, not ever yet clever enough to approach the genius they must have possessed."

"Then we didn't spring from amoeba?" Douglas asked.

"No. Not in the Third Plane anyway. The ape probably sprang from that. Amoeba, fish, saurian, dinosauria, ape. *Homo sapiens* is a distinct but mighty breed."

There was an obvious pride in Brooks' voice as he claimed his connection with mankind which sounded rather odd in the windless silences of the observatory. Douglas glanced at the girl as the physicist spoke again.

"Do you comprehend what we have here?" he breathed. "All around us? In these machines there is power such as man never dreamed of in our little circumscribed three-dimensioned world!"

"But you don't understand any of it," Vera pointed out, sensing the ambition in his voice.

"I could—given time."

"That Voice, or whatever it was, said that this is our rightful heritage," Douglas mused. "In that case everybody in the world ought to share it. It is theirs—not ours. We could make a grand thing of humanity's future if this plane could be resurrected. In time I might even find out how to make eyes that are four-dimensional and thereby we could enjoy our full legacy."

"Yes, that's true." It was plain deep thoughts were going through the physicist's brain, thoughts other than those which prompted his next question. "I just wonder where these four-dimensional people went? And why?"

"We may find out in time," Douglas answered. "We—"

Whatever he was going to say was lost, for all of a sudden the three of them felt a vicious tingling sweeping through their bodies. So swiftly did it come that they had hardly time to realize what had occurred, they found the ruined observatory fading from before their eyes.

Darkness. A flash of light that seemed to sweep from infinity.

All three of them fell heavily.

Dazed, they looked about them. They were lying on their backs on a deserted sidewalk, a street lamp casting a soft glow over their heads. Silently a car slid past towards the city center.

"We're back!" Vera cried hoarsely, getting up. "Oh, thank heavens for that! We're back in the city!"

"Can you see Beyond?" Brooks demanded, catching her arm.

"Yes. It's the same as usual. But it's dark, of course. What do I care anyway?" Vera shrugged. "We're back in our own plane, among our own people."

"Confound it!" Brooks exploded abruptly. "That log book. It's gone!"

He searched round for it desperately, and Douglas and Vera helped him. Then he finally gave a sardonic chuckle.

"Never mind. I should have known. It isn't adapted to the vibration of this plane, so it just couldn't come any more than tomorrow can be a part of yesterday. My word will have to suffice."

"There's a police officer down the road there," Douglas murmured. "With these provision packs on our backs and at this hour of night, we might be run in. Let's get moving."

They went, as fast as they could. When finally they gained a recognizable street intersection they discovered they had only moved about three miles from their starting point.

"You'd better stay the night at our place, Doug," Brooks decided. "We'll get a meal and a sleep, then we've the devil of a lot to talk over."

CHAPTER VIII

Doubt

IT WAS only when they got to bed that the three experienced the full weight of their weariness. Oddly enough, the moment they came back into their own time and space normal bodily conditions reasserted themselves and they felt indeed as if they had been wandering for ages without food or drink. As to the Time-discrepancy between planes, Brooks frankly had no ex-

planation to offer since it involved deep mathematical issues.

It was ten the following morning before the manservant awakened each of them in turn. Immediately after breakfast, Brooks convened a council of action in the library.

"What we have discovered," he said earnestly, tapping his fingers emphatically on top of the polished desk, "opens a huge field of possibility—so huge one can't grasp it all at once. Unlimited power and prospects. That is what we have in the fourth dimension, and that is what we have to hold. Just discovering such wonders is of no use by itself. We have got to make a profit out of it."

"Depends on what you call a profit," Douglas said, studying Brooks' eager features. "For my part, my views last night are the same as now. I believe we should try and give the people of the world the heritage to which they are rightly entitled."

"And so do I," Vera said promptly.

"You, Sis, are too inexperienced in the ways of science and the world to know anything about it," the physicist said calmly. "And you're not showing much vision either, Doug! One can't just give a thing as mighty as this to all the varied people of Earth. They'd abuse it. That is, without a leader," he finished slowly.

Douglas gave him a sharp look. "I may be wrong, Mason, but it sounds to me as though you want to turn the science we've discovered to your own personal advantage."

"Right!" Brooks grinned sardonically. "And why not? What does the ordinary man or woman know of science? They are born to be controlled, not to be controllers. I have a plan—a good one, too! Listen."

He leaned forward across the desk intently.

"I am the master of this situation because I have the key to the unknown. I have the machinery which can get us there—and I have a sister who knows what is going on in both planes. On top of that I am the Chief Scientist of this city and that means one thing above all others—that I know as much, and more, of science than all the rest of the City Scientists put together.

"Now, I can't hope to master all those machines in the other plane off my own bat, for it would take too long. But I can take with me the best scientists the City Scientists possess and get them to help me.

"I can pool their knowledge and make myself acquainted with everything they discover. They will find things out individually and so each will supply an unrelated section of information which I shall piece into the complete jig-saw. By that means I can become the supreme thinker while they simply have only sections of knowledge. There! Isn't that a grand idea?"

"But what about everybody sharing in the benefits?" Douglas demanded.

"Nobody can share in any benefits until everything is under control, can they? That's logical. We've got to get organized first."

Douglas stared, thoughtfully at the desk and Vera rubbed her round chin as she cogitated. The physicist watched them for a moment or two. Then he got to his feet impatiently.

"If only either of you had the merest atom of science in your makeup you'd move a blamed sight quicker!" he snapped. "My plan is the only one. With the knowledge I've got, I'm the obvious leader. We have the pearl of great price in our hands. The possibilities embrace space travel, transmission of power by radio, thought-wave transference. We know those things already exist over there. There must be other wonders."

Douglas raised his eyes from the desk at last and looked to where the physicist was waiting grimly.

"Maybe you've worked it out okay," he said. "I don't like the ambitious flavor about it, but maybe that is because I am conservative."

"In my view, Mace, you've got a bad attack of ambition," Vera said, as her brother glanced at her. "I can't do anything about it now. But if you get a good swift punch on the nose later, don't blame me!"

BROOKS grinned. "I can look after myself." He glanced at his watch. "Better get dressed to go out, both of you. We're due to give the City Scientists the surprise of their lives this morning. They'll find I'm turning my vacation to good account."

Mason Brooks' eyes were glittering with a hard light as he turned away.

Because he was Chief Physicist, Mason Brooks had no difficulty in calling together the six authorities who directed the destinies of the City Scientists. But, though his position was the highest in the research field, he did not possess the power of the last word.

This power lay with the six themselves, and ultimately with Walbrook Dean, the sixty-three-year-old multimillionaire physicist, whose money and brains, under Con-

gressional authority, had banded the City Scientists together.

This gray-haired, imperturable man with the shrewd brown eyes sat at the head of the long table when at an hour before noon Brooks had at last succeeded in assembling everybody.

As usual Brooks did not waste any time. Standing up he surveyed the faces, particularly those of his sister and Douglas as they sat in rather dubious silence.

"Gentlemen, do you admit the existence of the fourth dimension?" Brooks asked at length.

There was a surprised silence, then Banridge the mathematician nodded.

"Theoretically, yes."

"That theory, gentlemen, is now a fact! I have found the fourth dimension, and explored it, in company with my sister here and Dr. Ashfield."

Not by the merest flicker of an eyelid did Walbrook Dean reveal that he was surprised. He looked at his colleagues and read expressions varying between downright incredulity and polite wonder.

"Perhaps you would explain in detail?" asked Jones, a geometrist.

"Willingly!"

And Brooks did, adding neither more nor less than had actually occurred.

"I know it is hard to believe," he concluded. "I could have brought back proof with me in the shape of the log book of the *Kobenhavn,* but the vibratory differences between this plane and that prevented me.

"You will have to take my word for it that such a plane, and such a log book, really exists. In that log book is the signed statement of a trusted master mariner to the effect that he was lost in a strange land."

"Assuming that you have found this fourth dimension, Mr. Brooks, what do you wish of us?" Walbrook Dean asked. "Surely you had some reason for summoning us other than just to hear your story?"

"Of course." Brooks nodded his sleek head. "I want you to ask Congress for a financial grant, so that some hundreds of 'transition' machines may be manufactured, by which the best scientists in the world may be transported into this other dimension to study its intricacies.

"The machine I have, copied from one in the fourth dimension, is only capable at full capacity of dealing with three people. Then it exhausts itself. So of course many machines would be needed."

Brooks waited in ill disguised impatience while the dean pondered. Then Walbrook Dean's eyes strayed to Vera, and finally back to the physicist again.

"According to your story, Mr. Brooks, your sister was blinded, given artificial eyes, and then found she could see into the fourth dimension. The facts about the eye operation have leaked into the press, of course, and I understand that you, Dr. Ashfield, were removed from the register because of your activities?"

"True," Douglas nodded. "But I don't quite see what it has to do with the case. We have seen the fourth dimension."

"As to that, I am in no position to agree or disagree. But obviously I cannot inform Congress that the dimension was discovered because an eye surgeon operated on Miss Brooks contrary to the wishes of the Ophthalmic Council. That would put things in a bad light right at the start.

"In the second place, Mr. Brooks, it is

[*Turn page*]

Backache, Leg Pains May Be Danger Sign

Of Tired Kidneys

If backache and leg pains are making you miserable, don't just complain and do nothing about them. Nature may be warning you that your kidneys need attention.

The kidneys are Nature's chief way of taking excess acids and poisonous waste out of the blood. They help most people pass about 3 pints a day.

If the 15 miles of kidney tubes and filters don't work well, poisonous waste matter stays in the blood. These poisons may start nagging backaches, rheumatic pains, leg pains, loss of pep and energy, getting up nights, swelling, puffiness under the eyes, headaches and dizziness. Frequent or scanty passages with smarting and burning sometimes shows there is something wrong with your kidneys or bladder.

Don't wait! Ask your druggist for Doan's Pills, a stimulant diuretic, used successfully by millions for over 40 years. Doan's give happy relief and will help the 15 miles of kidney tubes flush out poisonous waste from the blood. Get Doan's Pills. *(Adv.)*

common knowledge by now that your experiments in matter-into-matter were the root cause of your sister losing her sight. You caused an appalling and costly explosion. Do you think, with this in mind, with no other proof at all but your own word and a story about a log-book of a vanished ship, that Congress would be willing to grant huge sums of money in the creation of machinery designed by you?"

"Do you further think that any scientist would trust his life to your apparatus, having in mind the tragic consequences of your other experiment?"

COLOR crept into Brook's face and neck. "But I've already done it!" he shouted indignantly. "If we went and came back, so can anybody else!"

"We have only your word that you have done it, Mr. Brooks. Congress would require more proof than that. Nor would the mere fact that your sister claims she can see into the fourth dimension suffice. As I understand it she gave out the news that she was still half blind, even after the operation."

"I told her to do that, for security reasons."

"A pity. It rather spoils your own case. Tell me, Dr. Ashfield, as an oculist, can you see anything different about Miss Brooks' eyes? Anything that might imply she can seen another plane?"

"Well, no," Douglas admitted grudgingly. "I don't know even now how it happened. It just—did."

"Which would not suit Congress," Walbrook Dean sighed.

"Gentlemen, I regard this as an insult to my knowledge and position," Brooks said, keeping his temper with difficulty.

Dean leaned forward, his arms on the shining table.

"Do you want frankness?" he asked quietly.

"Certainly! It can't be worse than insults, anyway."

"Very well. It is a well known fact that you are a clever man, and an ambitious one. Time and again you have tried to advance your position by inventing the most astonishing scientific devices—the matter-into-matter machine was one of them. Up to now you have made no definite progress because we of the City Scientists have to keep a tight rein over science's progress, if only for the public good.

"This effort of yours might quite easily be —forgive me—another stunt! We certainly would get into trouble with Congress if we tried to get financial backing. I suggest that you provide absolute proof. Perhaps you can get that log book here or else make us see into the fourth dimension as Miss Brooks does. Then, and only then, we'll go further."

For a long time Brooks stared at the impersonal face fixedly.

"Bluntly, you dismiss the whole idea?" he snapped.

"Yes—for your good and ours. If it were a lesser scientist, we would have reported the whole thing as a clever trick to get money for scientific experiments but, being you, I am open to conviction."

Brooks kicked his chair aside.

"Serves me right for wasting my time," he said, his face white with anger. "Thank you, gentlemen. And I'll not forget you for it, either!"

He jerked his head to his sister and Douglas and they followed him out into the paneled corridor. He closed the Board Room door with a vicious slam.

"Now you know how it feels," Douglas murmured, as they made their way towards the exit.

"What do you mean by that?" the physicist rasped.

"I was hauled up before the Ophthalmic Council and afterwards kicked out on my ear, thanks to you. Now you've got the same thing. Not kicked out, maybe, but you're not believed."

"I should care," Brooks answered. "I'll solve those other-plane machines myself. I gave them their chance."

"For your own ends," Vera put in. "You meant to use them. You said you did. I think Dean saw through your little plot."

"Oh, shut up!" Brooks was too incensed to pursue the subject further, but, by the time they had reached Fifth Avenue, he was cool again—grimly cool.

He said nothing until after lunch. By that time he appeared to have made up his mind. Peremptorily he ordered Douglas and Vera into the laboratory.

"We're going back there," he announced. "Not for just a few weeks, but indefinitely. Once on the other side I think we can keep recharging ourselves. Since they have as good as called me a liar at the City Scientists I'm quitting. Your practise has gone anyway, Doug. We can spend the afternoon packing

a few crates with provisions and other necessities."

He fell to thinking for a moment.

"Perhaps it's better this way, come to think of it," he went on. "If we can solve those machines ourselves, it means no sharing. I suppose, really, I could finance transition machines myself, but why the devil should I? That's Congress' privilege. Well, we're going. You two can come with me?"

His tone implied that he fully expected it.

"We'll come, if only to keep the brakes on your ambitions," Vera answered. "From my standpoint, as a woman, I can see an awful lot of trouble coming up, if you get your hands on unlimited scientific power."

"You're a feminine little fool," he answered briefly. "And let's hear your grudge, Doug, while we're at it."

"No grudge," he answered. "I'm distressed about the whole thing, really. I wanted people to know, to be able to use this wonderland we have found."

"They will—later," Brooks said, grandly. "Well, let's start packing up. Fetch that crate over here, Sis. I'll check the apparatus and make sure everything's okay."

CHAPTER IX

Riddle of the Planets

SHORTLY before seven o'clock in the evening when they made their second leap into the other plane. With them, likewise altered in vibratory rate, went three packing cases full of needful things. The experience of the transition was not quite so unnerving this time. As before they found themselves lying on their backs on the hard ground with the grotesque moon and icily shining stars above them. Again that landscape which swept to eternity stretched away in every direction.

"Good!" Brooks murmured, getting up. "The cases have come too. I rather thought they would. Difficult to decide just how much alteration in atomic setup they needed."

The girl and Douglas stood up beside him as he looked towards the distant ruins of the city.

"Going to hunt for that log book?" Vera inquired.

"No. If they can't take my word they can go to blazes. We'll camp in the machine hall. Give me a hand with the crates."

So work commenced, and work it certainly was. The cases were all heavy, but at least the apparent distances were foreshortened by the odd light-values of the plane. In all, with Vera helping, it took them about an hour of normal time to transport their belongings to the first machine hall. Then Brooks switched on three portable floodlights he had brought along in Crate Number One.

Unpacking began, working in an area that seemed curiously bright even for the floodlights. It occurred to Douglas after a while what was wrong. Suddenly, staring behind him, he caught the physicist's arm.

"Say, look!" he breathed. "The light's right behind us, but there are no shadows."

Somehow it was eery. All three of them deliberately interposed their bodies between the light and the nearest wall, but the light shone on steadily, unmasked.

"That is what has been worrying me all along," Vera decided at length. "I knew there was something odd—peculiar."

"A shadow is two dimensional in that it has only length and breadth," Brooks said pensively. "We know that light waves not only don't go straight in this plane, as they're supposed to, but that they move with infinite velocity. A shadow is the direct outcome of three dimensions, not four. That, and the light wave differences, probably explains their absence."

Satisfied, at least in his own mind, he turned back to emptying the crates. Gradually provisions, small machine tools, bedding, electrical instruments, clothes—all kinds of things were carefully unloaded, including portable cooking apparatus fitted with its own batteries.

It took them another two hours to finish their task and get the bedding arranged. Then in the double light of ghostly moon and floodlamps they squatted down to a meal before the cone of heated element standing in the center of the vast hall.

"If stored energy were not an everyday thing to us, we'd be mighty cold," Brooks reflected, eating a sandwich.

"And dark," Douglas added. "Except for the moon."

Suddenly, in spite of herself, Vera gave a little shiver.

"This place still frightens me," she said, as the two men looked at her. "Whether it is because I can see two worlds at once, or

whether there is really something deadly about it, I don't know. But—well—I'm still scared!"

"Nerves," Brooks decided calmly.

"I'm not so sure. I have the feeling that I am being watched all the time by somebody I can't see. I've noticed it ever since we first came here on that other trip."

Her brother's keen eyes traveled in a wide circuit as he surveyed the hall.

"The place is stone dead," he proclaimed finally. "Just try curbing your imagination. I certainly don't feel it. Do you, Doug?"

"No. But this place is a creepy spot all the same."

"Perhaps, being a woman, I'm more sensitive," Vera mused. "And yet, after all, we didn't solve where the people who owned this city went to, did we? They might be all around us, invisible, watching."

HER brother stopped with a sandwich halfway to his mouth.

"They might have—evolved," he said. "The Voice did say that they had done that, but it also said that they had departed from this planet. Anyhow, why the devil should they stop here when they can roam the universe?"

"It's a problem we'll have to solve finally," Douglas said thinking. "At least we must try and find out where they went. As for Vera's fears, I don't think we ought to deride any emotion here. It might provide a clue."

Brooks grinned. "You're in love with Vera. To me she is just a sister—and a pretty crazy one at that. Best thing we can do is finish this meal, then get some sleep. When daylight comes, we'll get busy in real earnest."

They slept without interruption, again to awake again beneath that crazy, prominence-girdled sun creeping across the dull blue unclouded sky. Breakfast over, Brooks outlined his plans.

"We have this hall, and the next one—the observatory—to examine first," he explained. "As near as I can tell, most of the stuff in here is electrical and therefore right up my street. You, Doug, as an oculist and expert in lenses will probably find the observatory more to your taste. Find out everything you can and we'll compare notes when the sun reaches the meridian. That, as near as we can tell, should be noon."

"And what do I do?" Vera asked dryly. "Twiddle my thumbs?"

"Either that or prepare the dinner."

Her brother turned away actively, small electric testing instruments bulging in his pockets. The girl watched him hurry toward the distant regions of the hall.

"Dinner my foot!" she said calmly, turning to Douglas. "I'm coming with you."

He smiled and nodded. Together they left the huge main hall with its open roof and walked through to the next one. Now that they came to look at the observatory properly, they noticed that, apart from the giant central reflecting telescope there were perhaps two hundred other optical machines, but of what precise nature remained to be seen.

After the girl had wandered off to investigate on her own account, Douglas began to prowl round the apparatus. In a while he realized that he had walked into a wonderland. There were photomicrometers of incredible delicacy, as perfect as the day they had been abandoned; television equipment which apparently did not need any transmitter at the other end to deliver its images. Rather it seemed only to need current for the generation of a "seeing-beam" of its own and retransmit the result back into the scanning screen.

Then there were lens-grinding machines, flawlessly cast. There were microscopes so powerful that a strand of hair looked like a thigh for thickness and bits of dust like crystaline rock. Other instruments were incomprehensible altogether and could only explain themselves when and if power was finally restored.

IN HER search Vera came across radio equipment, as distant from the television. There was X-ray apparatus, and instruments with ground glass lenses which perhaps emitted rays of different frequencies, known and unknown.

She saw cameras, color screens, spectroheliographs, thermoscopes, electroscopes, curiously distorting mirrors which gave the impression of looking into several dimensions at once. She wandered amidst them, and marveled. But she could not hope to understand them.

Finally she rejoined Douglas again beside the giant reflector and they compared results.

"That our vanished friends were masters of science is quite evident," Douglas commented pensively. "How many of their de-

vices work we shan't know unless Mason finds how to get the power going."

"And this is only one hall," Vera exclaimed. "There are dozens of others. I know that. It sort of—of overwhelms you when you think of it!"

Douglas nodded slowly and then turned to look at the huge telescope. Its great central universal mountings were obviously powered by electric motors, dusty and silent. So complicated was the telescope that it took him some time to find the tiny eyepieces amidst the adjustment screws. When at last he discovered them—as apart from the reflector mirrors which he simply did not understand at all—he glued his eyes to the lenses and saw dark blue sky.

To his surprise the monster instrument was so marvelously balanced it moved gently under the pressure of his hand. Evidently the motors were to keep it tracking when necessary for protracted observation. Gently he shifted the giant. At last he sucked in his breath in amazement.

Something round, apparently two feet in diameter, was clear as crystal before him. Surely it could not be a planet! Not at such a size. In his own plane he recalled that even the four-hundred-inch giant at Mount Everest only made a planet look no larger than a melon. This result was incredible.

Yet a planet it certainly was, unclouded and drenched in sunshine! He could descry green foliage, deep blue seas, cities of fantastic whiteness. As he looked and wondered, the cities melted into thin air and there was only sun-drenched landscape.

"What the devil!" he whispered, pressing his fingers to his eyes.

Vera looked at him quickly.

"Anything wrong?"

"I don't know. I think I'm going crazy."

He looked up at the sky through the broken roof girders. There was only one planet which could be within range of the instrument in its present position.

"Venus!" he ejaculated. "But she ought to be heavily clouded, but she isn't. There are several cities—or were until they faded."

"Faded?" the girl repeated, mystified.

"Something interesting?" asked Brooks, lounging in with a preoccupied expression.

Douglas turned to him quickly.

"Take a look through here and tell me if I'm seeing things."

As it happened Douglas found it was not necessary for him to desert the eyepieces. The telescope had six sets in all, all tuned prismatically to a central receiving mirror which, when power was available to liven its energized mercury surface, cast its reflections on to the giant mirror in the circular pit underneath the instrument.

So three pairs of eyes stared into the monster, intently. Even for Vera the view was more or less normal since space was superimposed on space, and in her own plane the daylight rendered Venus invisible anyway.

Once again those cities merged into view, extensive, exquisitely designed, the last dream of a master-architect. Then, once more, they faded like mist. The three pairs of eyes searched the planet restlessly but no other city was visible. There were only deep blue oceans and powdery sun-drenched land.

"Venus all right," Brooks confirmed, though his voice showed he was shocked at this disavowal of known scientific facts. "How about Mars?"

The giant swung again and after some maneuvering settled on the smaller planet. It wasn't red, not even ocher-colored, and the *canali* was entirely absent.

Instead it was definitely a world of cities, deep gray cities, much as Earth's might look from another world. There were oceans too, and fairly prosperous-looking landscapes if the cultivated fields under the weak sunshine were any guide.

SLOWLY Brooks withdrew his eyes from the lenses and stood for a while in deep thought. He turned at last to find his sister and Douglas looking at him expectantly.

"I said the first night we came here that Mars and Venus looked different," he remarked. "Now I know I was right. Mars has lost his red color and is no longer a dead world. Venus, on the other hand, has lost her cloud cover and therefore her reflective surface which gave her such a high albedo. But this is incredible!" he broke off. "Why so different?"

He bit his underlip with vexation because he could not find an immediate solution to the problem. Mysteries, especially when they disproved the scientific facts of ages, annoyed him.

"Of course, space looks as different in the fourth dimension as land does," he mused.

"How do you explain those melting Venusian cities?" Douglas asked.

"I just don't. I'm a physicist, not a magi-

cian. All I can say is that Venus has a civilization far higher than that of Mars. The beauty of Venus' vanishing cities proves it. They were far ahead in design of anything Mars possesses.

"Mars, apparently, has a civilization about the same as ours—normal plane, I mean. As for our being able to see the planets so clearly, I imagine, unknowingly, that we are looking at them through a space curved and foreshortened by the fourth dimension, apart from the tremendous power of this instrument, of course."

"But does the fourth dimension explain their utterly different appearance?" Douglas demanded.

"I presume it does. But don't ask me how."

Brooks sighed and scowled over the problem. At last he gave a shrug.

"No use trying to solve what we don't know. We'll have to walk before we can run. I've been taking a look around that other hall, by the way, and I've found plenty."

With something of an effort, Douglas and the girl withdrew their attention from the telescope and watched Brooks as he paced slowly up and down. In every move he betrayed an intense eagerness from the things he had discovered.

"More I see of the next hall the surer I become that our departed scientists had mastered the secret of power from the sun transmitted direct through the air," he said. "You've seen that central towerlike instrument with the ball at the top? Well, I climbed up to it."

Brooks stopped his pacing, a gleam in his eyes.

"It's made of some kind of metal I never heard of. It is possible, of course, that certain metals, or combination of metals, can attract radiation unto themselves and absorb it, much in the same way as tourmaline crystals polarize light, though that of course is in a different order of science. What I mean is this:

"To judge from the wiring of this ball it absorbs power from the atmosphere, which can only mean the sun, and then transmits it from a specially designed antennae to all parts of the hall—in fact very probably to all parts of this city. I think each machine picks up the power that way. A big radius might be affected. I've yet to discover the extent of the transmission."

"Sounds interesting," Douglas admitted. "How do you start to prove your theory?"

"I'm studying the layout of the switches," Brooks answered. "If their arrangement comes anywhere near anything I understand I am going to risk moving some of them and see what happens." Pausing, he consulted his notebook. "That's what I came to tell you. And I came here also to find out what you have discovered as well, of course."

Briefly Douglas related his own findings and Vera added hers.

The physicist nodded.

"Good! In due time we'll find out just what makes everything tick. Well, I'm going back to that tower plant to study it."

He went off with long strides and Douglas looked after him.

"Watertight mind," he murmured. "For my part I'm a darned sight more interested in finding out how the planets have changed their faces. Still, I suppose we can't do anything more about it now. Better see what else there is."

CHAPTER X

Science Without End

WHEN they had about exhausted the resources of the observatory, they went through the further doorway and so out into the great crumbled expanses of what had once probably been the city's heart, a heart that had been made up of huge buildings and massive terraces.

"Something occurs to me," Douglas said thoughtfully, gazing round in the shadowless sunlight. "This city, when it was in full life, could have looked very like those vanishing cities we saw on Venus. The stone is similar—whitish. Dust and age have dimmed it now, of course."

Vera nodded.

"It is a thought," she agreed, but she had to drop the subject because she simply had not the knowledge to carry it on.

They began to walk, slowly. Inevitably they covered greater distances than they had intended due to their inability to determine length and extension. Ten minutes of advance across the crumbled ruins had put the two halls out of sight and they now faced another hall, or rather the remains of one

with only a single wall standing. The girl surveyed it pensively.

"This is the one I saw from our own plane —from the park!" she exclaimed. "I can see the park superimposed behind it. There! That's the electronic machine I described to Mace."

In a few minutes they were in a long disused aisle with the silent giants of an abandoned science on both sides of them. Douglas looked at the electronic machine, but beyond noticing that it was similar, on a gigantic scale, to the one Brooks had constructed he understood but little about it. Nor were the other machines within his field of knowledge. Every one apparently was electrical, but the great majority resembled objects like searchlights. There were huge lenses and, behind them, two bars like the electrodes of a carbon arc.

"Wouldn't want searchlights here, surely?" he asked the girl, puzzled. She raised and lowered her shoulders helplessly.

Further along the aisle they came upon an instrument like an organ. There were endless stops, pedals, switches, and plugs. Inside it, a maze of complicated wiring. Perched on the top of it was a frame of ground glass about four feet square.

"Do you know something," the girl said slowly, looking about her. "This place looks like—like an arsenal. Those searchlight things might be ray-projectors. We have similar instruments in our own army back home anyway. And this thing here might be a sort of television thing for watching troop movements. Just a guess, but you never know."

Douglas nodded rather wonderingly. Then he looked attentively at the multiple, master-switchboard. Most of the switches were connected up to the instruments by fine silvery wire which was within a casing of hard insulation.

Douglas' fingers itched to try one, but he refrained for fear of letting loose forces beyond his control. Finally his gaze settled on a lever. It was firmly embedded in a slot in the metallic floor, but there was no trace of the object to which it was connected.

"Pull it!" the girl urged. "Can't do any harm, surely?"

Douglas hesitated. After a moment of indecision, he seized the lever with both hands and pulled it towards him. Perhaps two hundred yards away a section of the metal floor, with debris on top of it, suddenly caved inward. There was the muffled rumble of sliding rock and earth plunging below.

"Underground!" Vera cried excitedly. "We've found something!"

She turned and hurried towards the area with Douglas close behind her. When they pulled up short, they found themselves gazing down into a black emptiness about fifteen feet square with the dim evidence of a slanting metal floor leading up to the opening.

"Are you risking it?" the girl asked.

"Wait here," Douglas ordered. He left her while he raced back across fantastic distances to the main hall next to the observatory for his torch. Brooks, in the further reaches studying the tower, glanced at him but nothing more.

In five minutes Douglas had rejoined the girl. Switching on the torch beam he played it on a sloping floor which went down—deep down—into the depths of the earth.

"Let's go," he murmured, taking her arm.

AS NEAR as they could tell, they went downwards for half a mile before the floor suddenly leveled out and expanded into a huge underground space, obviously machine-drilled. It extended far beyond the powerful beams of Douglas' torch on every side, and the light reflected back from metals and glasslike substances.

"By level of New York we're not far short of a mile down," the girl said. "I've been taking note."

Her voice echoed in the expanse. Carefully, half afraid, they went forward again to the nearest source of reflection. It proved to be a mighty affair like the cultivated product of a modern tank. It was streamlined, tractored, bristling with queer armament and fitted with a conning tower on which lay a residue of dust.

There was not just one tank but hundreds, thousands, as far as ever the torch beam could reach. No doubt they were supplemented by other forms of armament beyond this again.

In another direction were orderly files of stacked robots, shoulder to shoulder, motionless, their lensed eyes and crystaline bodies reflecting the glare. For many minutes Douglas and the girl walked down the center aisle between them, gaining a rough idea of the millions of them there must have been stored down here.

Then they came to objects like silver shut-

tles with vestigial wings sprouting from the sides.

"Airplanes, of sorts," the girl murmured. "Far ahead of anything we've got. This is an underground military dump, or something very like it."

"Yes, yes, that's right."

Douglas' voice was serious, so much so that Vera turned to him in the torchlight.

"What's wrong Doug?" It's a discovery, isn't it?"

"An unpleasant one," he responded. "Do I have to tell you that you have an ambitious brother, or do you know that already?"

Vera was silent for awhile, then she gave a little sigh.

"I see what you mean. You think that if he saw all this stuff here he might try and use it as a means of conquest?" She drew a deep breath. "But how could he? There's nothing to conquer. And he can't use these things in our own plane."

"He might find a way. He discovered how to bring crates from There to Here, so he might find a method of getting stuff like this from Here to There. If that failed, populated Mars might take his fancy. I know it's a big assumption, and maybe unfair to Mason, but he's the kind of man who believes in big things. He's pretty bitter about the way the City Scientists turned him down, remember."

"Then we'll say nothing about this," the girl decided. "Let's get back before he starts looking for us."

Retracing their steps they reached the ruined hall again before any signs of Mason Brooks became visible. When Douglas Ashfield had closed the floor trap again and covered it realistically with more debris, Douglas returned to the actuating lever and studied its base. Finally he turned it in his hands and it began to unscrew, eventually parting from the socket in the floor-slot.

Carefully he put a slab of stone over the slot, then looked at the girl as he weighed the lever in his hands.

"So long as we keep the lever and he has other things on his mind, he's unlikely to find anything," he said. "We can hide this—here."

He climbed up the bulk of a nearby machine and placed the lever behind its topmost ledge. The chances of Brooks finding it, or even then guessing its purpose, were remote.

"As to the rest of this stuff, I don't know much about it," Douglas decided, looking around. "But I may later. We'd better see how Mason is progressing. He may have the key to the whole outfit in that central tower plant he's studying."

Mason Brooks certainly had the key, but to discover just how it worked was not a task overcome in a few minutes. For many days, and part of some nights, he worked on equations and notes.

He forced his keen scientific mind to the utmost to work out the details of the complicated sciences involved in the control of the central power-tower. He seemed no longer in doubt that this was just what it was.

A week passed, time in which all three had gradually become accustomed to their surroundings and had discovered practically everything the ruined city contained. Then a fortnight—

IN THREE weeks Brooks announced that he had solved the problem. Over a breakfast prepared by the girl, following a night during which he had been scribbling by the light of a portable lamp, he made the results of his research known.

"That central tower contains a metal attractor at the apex," he explained. "It is a well known fact that the sun gives off a vast surplus of energy which we have never found a way to utilize. But not so these scientists. They devised a metal with an atomic setup able to absorb these radiations —seventy-five percent of them anyway. This metal, when it has absorbed them, changes its atomic makeup of its own accord, similar but much faster to uranium changing into lead. The resultant energy given off by the change, is transmitted to the power transformers in the base of the tower.

"Those towers, on the moving of certain switches, give power—*atomic* power—to the machines. They pick up the transmission as an aerial picks up radio waves, and thereby begin to function. The actual radiation in terms of normal energy is not much, but expressed in terms of atomic energy it is stupendous.

"In other words and put briefly, that ball arrangement can absorb enough atomic energy from the sun during its daily race through the sky, to keep this city going for two months. Repeated daily you can see what would happen. The area it covers seems to be infinite, like everything else

that functions by wave-length in this cock-eyed place."

"Then it has been absorbing energy for untold generations?" Vera questioned.

"Yes. But the energy has been passing off harmlessly through a separate earthing circuit, otherwise the whole apparatus would have consumed itself long ago. I tested what I thought was this earthing circuit and it smashed my voltmeter.

"Since it is a Fry and Merrins instrument and goes up to maximum readings it showed two things—colossal power, and the power in existence now! Since I have studied the switch layout, I know just how to shunt the power from the 'waste' circuit to the normal circuit. And that is just what I intend to do this morning."

"Once that is done, you think that every machine ought to function by just handling the controls?" Douglas said.

"They should."

His observations brought breakfast to an abrupt conclusion and then they all three headed into the center of the hall. Obviously quite sure of himself now and studying his notes at intervals, Brooks went to work on the controls of the towers. Finally, after moving a series of switches, he pulled the heavy master-switch free of the top contacts and jammed it in the lower ones.

There was a sound—the first the three had ever heard in this plane outside of the noises they themselves had made. It was a deep, purring hum of power, power flawlessly smooth, flowing through apparatus made by master engineers.

"It works!" Brooks exulted, color in his pale cheeks. "I was right. Look at those dynamos over there! They must have been on open switch ready to pick up transmission right away."

In a far corner of the hall were six huge, flawlessly balanced generators, spinning to a rising surge of power, their central shafts revolving so true that they seemed to be motionless.

"They must be to power the instruments which do not rely on radiated power," Brooks decided. "The others, though, should use this tower's broadcast energy. Let's see—"

He hurried over to the nearest machine, a complicated device rather like a loom. The moment he pressed the switches, metallic arms began to move gently, gathering speed. Fascinated, the trio watched as by mechanical processes the machine drew out long lengths of synthetically made stuff like cotton and began to weave them crosswise into a tightly-knit fabric.

"Clothes, carpets, tapestries!" Brooks exclaimed. "It's an incredibly efficient automatic loom."

They had suddenly entered a scientist's paradise. Each machine responded to the movement of switches and picked up the desseminated power.

They found they had equipment which created tabloids by breaking down and rebuilding the very atoms of the atmosphere. Others were mobile and moved about as vacuums and excavators, shoveling away rubbish and masonry by magnetic means.

There were automatic trip-hammers, drills, welding instruments, pulverizers, surgical apparatus perfect beyond imagination. And in the observatory the radio and television equipment were ready for the using. In fact the task was to decide what the astounding machinery could not do!

FINALLY, towards evening, the three were satiated with discovery. They sat before a huge powered radiator eating some of the delicious synthetic food and discussing their achievements.

"One could build this city anew," Brooks said, thinking. "We have everything necessary to do it. We can create metal and stone just as easily as we can destroy it. We have excavators, mobile cranes. What we have not got is the labor—and, oddly enough, there don't seem to be any robots which might help."

Vera's eyes strayed to where Douglas was sitting and he smiled rather grimly as he thought of the thousands of them packed away in the underground.

"We might perhaps get labor here," Brooks went on slowly. "If we could once get people here, we could do a great deal."

"That's been my idea from the start," Douglas reminded him. "Everybody ought to share in this. We could build a city in this place which would make any normal city an utter back number. But after what happened to us how are we going to do it?"

"Offhand I don't know," Brooks continued. "But I have a notion twisting in the back of my mind. Frankly, I have another problem absorbing me at the moment. Those changed planets. I haven't forgotten about them, you know. We know that at least Mars

is inhabited and maybe Venus too, and we have the radio equipment working too. It utilizes ultra short waves. I'm wondering if we might try a radio communication."

"Good idea," Douglas agreed. "Since we seem to have fore-shortened space in this realm, a message might not be hindered as it is in our own plane."

The idea decided upon they acted. When supper was over, they went into the great observatory, floodlighted now by the normal lamps still embedded in the cracking walls, Brooks settled himself before the radio equipment, satisfied that at last he was tackling something he really understood.

It took him perhaps ten minutes of fishing with the transmission controls before he was satisfied that a short-wave carrier was going forth, aimed as near as his mathematics could judge it, at Venus' position in the night sky. Mars had yet to appear over the horizon.

"Earth calling Venus," he intoned into the microphone. "If you hear me show some sign. Earth calling."

For nearly twenty minutes he kept repeating his announcement, but no response came through the speakers.

Just as he was about to give up the task, something happened!

CHAPTER XI

Ways and Means

EACH of the three felt it simultaneously —an immense flowing of power about them, the conviction that somebody or something was present with them in the great roofless hall. Brooks turned very slowly and gazed at the astonished faces of his sister and Douglas. They were staring into emptiness, expecting to see something materialize any moment.

As yet, however, nothing untoward was visible. Nevertheless they knew, with every instinct they possessed, that intelligence was near them, intelligence so immense, so transcedental, that their human minds were cowed into submissive attention before it.

"You cannot see me, my friends," said a voice. If it was a voice. Like the thought-wave instrument they had encountered at first, it seemed they felt words instead of heard them.

"I—we—have known for some time of your arrival in this plane," it went on. "You need not waste time trying to get into touch with the second world. I was intending to come here in any case. I—we—represent the race from which you came. Our evolution has been such that our bodies no longer signify anything. Long ago our minds merged into one great thinking unit.

"Matter we do not need, or use. Even our cities, which you saw through the reflector, are only a figment of our thoughts. Before you could pry too closely into forbidden things, we willed our domain out of being. To your limited senses it vanished.

"On the other planet, which you call Mars, there exists matter of a lower order which, even so, is still generations ahead of yourselves, existing as it does in four instead of three dimensions. For that reason knowledge is greater and the physical body is more adapted to understanding the manifold problems at which you balk.

"From your own three-dimensional plane both planets appear deserted. Or at least one seems dead and the other wreathed in cloud. The cloud is merely a product to keep your greedy eyes from probing our secrets, and the dead aspect of Mars is due to the fact you see it three-dimensionally instead of in its true perspective."

"Can we not see you?" Brooks demanded, staring into the air.

"How can one ever see a thought?" asked the Presence dryly. "No, you cannot see me, nor do you hear me. You merely sense my —our—being here. We are interested in your activities, interested that you have reached so far upward on the journey to reclaiming your lost heritage.

"You are the children of the original Thousand Outcasts, of course. You have heard the story of your ancestors, and since I have read your own story from your minds, you need not explain anything. You propose to try and master this machinery."

"That was my idea," Brooks assented. "Or maybe you will not permit that?"

"On the contrary, we—I—shall watch your activities with interest. If we feel you have qualified to be the possessors of greater knowledge, we shall give it, and help you to return to your full status. If, on the other hand, we decide that there is still too much of the beast in you to allow you to control great science, we shall remove everything from you. It is for you yourselves to decide what our decision shall be."

"If I may speak, I feel that this heritage is not ours alone," Douglas put in quickly. "It belongs to the entire human race. They are as much descended from the Thousand as we are. But they won't believe in our discovery! How best can we convince them of the truth?"

"So far you have only mentioned it to high officials who are afraid to venture," the Presence answered. "They do not represent the people themselves. I shall not solve your problem for you. That is your own task. Let the people know! If you succeed, we shall see what you make of your discoveries—and achievements."

Abruptly that sense of immense power relaxed. The Presence, whatever it had been, had gone.

Brooks gave himself a little shake and rubbed his forehead.

"Mind!" he breathed, looking at the awe-stricken faces of his sister and Douglas. "Mind of the *nth* degree! To think that we might have been like that if our ancestors had not been traitors!"

"Or we might have been on Mars as lesser strata," Douglas pointed out.

"Vera might," Brooks corrected. "There has been a cleavage between the highly intelligent and the average type of being. One set has evolved into the highest of intelligences, so much so they are merged into a single unit. The other type has simply become highly evolved humanity with the heights still to be scaled."

Vera's voice was bitter. "To which I would belong?" she asked.

"You are not an intellectual, my dear," Brooks explained, getting to his feet. "I am. So is Douglas, even if we do have our different outlooks."

Vera hesitated over saying something further, then she changed her mind. In any case her brother had already forgotten his observations. He was pacing up and down, pondering.

"You realize that we have entire *carte blanche* here to do as we wish?" he said at last, coming to a halt. "We have only to master all there is in this place to gain for ourselves the keys of an even greater kingdom of science. That would mean travel beyond this world, large though it is four-dimensionally. It might even mean the chance to become pure intellectuals. We could travel space without recourse to space machines, as this Presence does. We could reach the furthermost deeps."

He stopped, recovering a hold of his imagination.

"This city has got to be built again." he decided. "And we must have labor to do it. It will need one person, maybe several, for each machine. It will need a directing, guiding mind, too."

"We know all that," Vera sighed. "But how are you ever going to tell the people? We shan't return to our own plane for a long time yet, and even when we do nobody will believe us."

"No," Brooks agreed, frowning thoughtfully. "Yet there must be a way. I'll think of something, eventually. Tomorrow I resume my study of the machines. Maybe I'll find an instrument somewhere which will give me an idea. Right now I think our best move is to get to bed."

The following morning Mason Brooks started his second analysis of the machines with a new zest. He also now had the advantage of seeing each machine operate since the central power-desseminating tower constantly radiated its energy.

Each machine he tested he noted down in detail, deciding later upon its precise function. Douglas and Vera accompanied him on his travels, especially into the more distant machine room, but he missed that hidden lever slot with the stone over it.

Ultimately he came back to the main hall where they had made their headquarters and concentrated his attention on the device which had operated at first when they had crossed the field of the electric eyes. How the thought impressions had been made, and the paralysis created while sensory impressions prevailed, he had not the least idea, but there was a simpler side to the apparatus which claimed his attention.

AFTER a whole day of studying the instrument he explained what was in his mind.

"This thing has a central transmitting plate," he said, as Douglas and Vera studied it. "You see this wafer- thin disk inside the protective casing? Its metal is similar to that comprising the energy-absorbing globe on the tower top there. Atomic setup is slightly different, though, meaning it is tuned for far lesser vibrations than the tower ball.

"Those lesser vibrations, I believe, are thought-waves. Thought-waves have a de-

finite vibration, remember—slight though it is. This disk captures them, and the energy thereof is passed into the transformers, and out from this antenna here. When the scientists left their thought message, they did it simply by leaving a thought-record, as we might a phonograph disk. But with it they added sensory impression vibrations, which belongs to this complicated mass of machinery down here.

"That part I don't understand yet. It might take me years to grasp the secret. But I do realize that this machine, as it is, with the sensory impression part cut out of circuit, can amplify thought."

"And how much good does that do us?" Vera asked.

"It brings us the people we need," Brooks said slowly. A complacent grin spread over his face. "Thought waves, by all the laws of science, are not stopped by any solid, any distance, or any dimension. That being so they will pass—amplified remember—from this into our own plane. We can force anybody we wish to come here!"

"Hypnotically?" Douglas questioned.

The scientist made an impatient gesture.

"Of course. But let me finish. We need quite a lot of people here to help us, and it might take a long time to get them individually. So I suggest that famous men and women of our own plane should be forced hypnotically to tell the people what we have here. Vera, with her double sight, can see exactly where such people are. Unknown to them, we can focus this machine right on them, compel them to do whatever we wish.

"The City Scientists can force Congress to grant money for the building of 'transition' machines. And if that doesn't work, I'll order the President himself to do it. In a word I'll twist those confounded obstinate higher-ups around my little finger!" Brooks' mouth had set harshly.

DOUGLAS nodded. "Yes, I suppose the thing is scientifically possible," he agreed. "In fact it is the only way you will ever start to convince people and get them here. But when they do get here, what then? I recall a rather grandiose scheme of yours to make each one the master of his own machine while you sit in the middle of the web and pool the knowledge of the lot. Is that still your idea?"

"Partly," Brooks assented. "At first it will have to be that way. At least until the city is rebuilt. After that—we'll see."

"Why don't you get the people here and then ask them what shall be done?" Vera suggested. "That's democratic. By assuming too much power you may come a cropper."

"I have spent many weeks learning the details of this place," Brooks answered in grim tones. "I don't intend to trade my knowledge with a mass of uneducated rabble. Some scientists will come too, I'm hoping, but they'll be in the minority.

"While I understand as much as I do, I'm staying in control. As a scientist the idea of handing over a heritage does not appeal to me. It would bring utter chaos."

There was a silence before Douglas answered.

"Well, we can see how it works, anyway. When do you propose to start?"

"That is up to Vera." Brooks glanced at her. "You know the most famous people in New York as well as I do. If necessary, we'll move to the area of Washington to tackle the President. The one I'd like to get at is that old diehard Walbrook Dean. He speaks every week, weather permitting, in the open park at the back of the Science Institute and gives a lecture on physics. That would be a grand chance. You can see him if he's outside, but not if he's inside a building."

"What you want me to do then is keep a check on every person of importance able to sway the people, and you go to work when they decide to give an outside address?" the girl asked.

"You have it exactly. Being early summer most of the public addresses, scientific and political, are given in the open air and that's going to help our cause a lot. So, Sis, keep your eyes open."

"I will," she promised, and stared beyond the immediate ruin of the hall into the dim, misty outlines of New York itself. She had grown so accustomed to two places at once that her mind had come to discount one and concentrate on the other. But now that she realized she had a task to perform, she began to take her 'mirage' bearings. As near as she could tell she was about half a mile from Fifth Avenue in an easterly direction.

"If, of course, there should be trouble between these people and ourselves when they arrive, I have many ways of making them do as I wish," Brooks remarked, thinking. "Not necessarily thought compulsion, but a display of force. Nothing like it to cow the lesser type of mind."

"Meaning?" Douglas asked ominously.

"I've examined the ruined hall where you and Vera saw that electronic machine she described to me," Mason Brooks said. "Everything in that hall—excepting the electronic machine—is made for warfare. It's an arsenal. Or did you think those things with lenses were limelights?" The physicist gave a cynical laugh.

"I didn't know what they were," Douglas confessed. "I guessed the place had military trend, though."

"It's a dream of power!" Brooks declared, clenching his fist. "Any crisis from anywhere could be weathered with machines like those. There are six different sets of radiation-projectors to start with. As near as I can tell, they emit freezing-beams, which stop molecules dead and produce an absolute zero, heat-beams, exciting matter into disintegration.

"Then there are paralytic-beams for fixing a living being utterly rigid and three others which incorporate atomic energy. Over all of them there is a master-switchboard and their range is infinity, near as I can figure. Just as well to know in case of trouble."

"You're not thinking of using such horrible things on our own people?" Vera asked blankly, turning.

"Of course not—just so long as they behave!"

THE girl moved forward, laid a hand on her brother's arm.

"Are you really trying to set yourself up as a ten-cent dictator?" she asked slowly. "If I thought for a moment you were, I'd never tell you what I can see in our own plane. That would spoil your plan right from the start!"

"This is absurd!" he protested. "Just because I point out that we have the wherewithal to protect ourselves, you start to jump to conclusions."

For a long moment the girl hesitated, searching his keen gray eyes. She was not quite sure what she read there but, womanlike, she decided he was entitled to the benefit of her doubt.

"All right," she said quietly. "Only don't stride too far! I haven't forgotten what the Presence said, you know. We can only take over in earnest if we prove worthy. Bullying isn't the way to do it."

Brooks grinned and patted her arm.

"I'll be a good boy, Sis. I promise!"

CHAPTER XII

Journey for 2,000

MORE than a week elapsed before Vera discovered the first subject for the thought amplification experiment, and during that week her ever-active brother had discovered something else. The radio equipment was capable, on its ultra short length, of receiving, but not transmitting, the radio waves desseminated in the normal three planes. There was a slight distortion due to its journey through the narrow veil of vibration separating the two planes, but it was still understandable.

Exactly how it was done was a problem upon which Brooks intended to exercise his mind in the future. Being a good scientist, he was content to accept the genius of the master race for what it was without giving himself a headache inquiring into the cause.

The discovery gave him an immediate advantage. It would now be possible to keep a finger on the pulse of opinion in their own plane. They would be able to judge exactly how the experiment was making out.

When Vera announced that she had read a poster on a street intersection to the effect that Senator Goldman would make a speech on world economics at the International Airway Park three evenings later, Brooks immediately went into action and moved his apparatus to the spot where, in the normal plane, the senator would stand on the raised platform. Since the instrument was self-powered it did not matter where it went, and as near as Brooks could judge it would be standing just behind the spot where the senator would be speaking.

Sure enough, on the chosen evening, Vera announced that he was present on the platform, a microphone before him and a quite respectably large audience spread out in the open space willing to while away an hour listening to him.

Mason Brooks had made every preparation. He had put Douglas in charge of the radio, whereby the words of the senator would be relayed from the third plane broadcasting station. An extension from the radio equipment and a subsidiary speaker standing on the rough plain nearby was all Brooks needed. With Vera at his side peering into apparent emptiness he waited for

her signals. Then when she gave them, he concentrated.

The effect was immediate, the contact being so close through the veil. In fact the machine did all that required of it so perfectly that the physicist found time to be surprised.

"Now I shall cover the field of economics," boomed the senator's well-fed voice over the plain, as Douglas tuned him in. "It is a wide field indeed." He paused as he received the impact of Brooks' thought-waves. "A very wide field—but there is a much larger one! And that is the fourth dimension. An entire new world in the fourth dimension was recently discovered by the eminent scientist, Mason Brooks."

A roar from the assembled people betrayed their surprise.

"It will come as a surprise to you to know that our learned City Scientists hushed up this mighty discovery for fear it might prove a threat to their personal power. They even called their chief physicist, Mr. Brooks, a liar. To show his contempt, Brooks went back into the fourth dimension! I, myself, know of the marvels of this plane, this world we should really all possess.

"There is a way to reach it too, and I can describe the exact machinery needed for the purpose. It is for you, the people, to demand that money and materials become available for such a transit to be made. There is no compulsion about it, of course. Only those among you who are anxious to assert yourselves and demand your rights are now offered the chance."

Altogether Senator Goldman talked for an hour on the wonders and benefits of the fourth dimension. Though he afterwards vowed that he could not remember a word he had said, the people were more than interested.

At later periods, when they heard the same kind of speech from Walbrook Dean himself, and finally even from the President —for which purpose Brooks and Vera changed their locale in the fourth dimension to match that of Washington in their own world—they became clamorous to know what it was all about.

Goldman had said that he knew how the necessary apparatus could be made, and at the next open air meeting he gave every detail, just as Brooks willed him to do, he himself taking the facts from the electronic machine, for he had never made an actual formula.

The struggle was over then. The people demanded some sort of action, and a somewhat bemused Walbrook Dean, in collaboration with the President, were obliged to give it to them. Four dimensional transit machines were mass-produced and then set up in a specially requisitioned area in Central Park. To many it was considered a stunt and to others an adventure.

Still others, mainly know-it-alls, branded it as the biggest hoax in creation, until with their own eyes these smart-alecks saw people fade into thin air one by one as the power operated.

IN CONSEQUENCE of all this there began to drift into the ruins of the fourth dimension a few scattered, bewildered people, men and women dazed by the journey and the incredible land in which they found themselves.

The sight of Brooks, calm and impersonal, with Douglas and Vera at either side of him, did much to raise their courage again. By degrees they began to understand the magnitude of the thing they had done, and they had no complaints. The calculating physicist had prepared everything beforehand. He had caused the automatic machines to create all the necessary food, bedding, and other vital necessities of life. Shelter was unnecessary, anyway, in this land of eternal calm.

The drifting dozens became hundreds. In a week there were two thousand. The ruins of the giant city were black with travelers from the third plane. Then, as Brooks had calculated, the transition machines on the other side burned themselves out after working at such high pressure.

Arrivals thinned—and finally ceased. Once this happened, he made the position clear. Ordering the people out onto the great expanse of plain one morning he stood on a collapsible stool and began talking to them.

"You came here, my friends, either out of idle curiosity or with the hope of getting something for nothing. You believed you were coming into Paradise, and have found only ruins. Well, you can have that Paradise, if you are prepared to work for it! There is superscience in this crumbled city, which I alone understand.

"If you are prepared to help, a new city can be built, and once that is done you will find yourselves in absolute security with nothing more to worry you and with science

ever at your elbow. If you do not feel like work, then reflect that there is no way back! I hold that key.

"The machines which transfered you here gave you enough energy change to keep you here for many years. Periodic recharges on this side can keep you here until death. If you don't wish to work you will find yourselves outcasts in a strange, weird land which you do not understand. But if you do work, under my orders, you can have everything!"

"Then we were brought here by false pretenses!" somebody shouted angrily. "We were told that science had discovered our rightful heritage and that by claiming it we would find everlasting peace. Even the President took part in the discussion and told us that."

"The President merely told you what I told him to tell you," Brooks answered calmly, gazing round. "That gives you some idea of the enormous power I wield, when

[*Turn page*]

even the President is at my behest. It was not a false promise, my friend. I have told you how you achieve peace and comfort—and that is work. As you should. To labor for science is an honor!"

"What do we do then?" demanded a woman in the front of the crowd.

"I have devised a labor-direction bureau," Brooks answered her. "It will operate in the main machinery hall. From each of you I will learn of your qualifications and then assign you to the appropriate task. The more brilliant of you, granting there are any, can become teachers and overseers. I propose to start this indexing after we have lunched in the usual way. For the moment that is all."

Brooks stepped down and waited for a while, a cold glint in his gray eyes as he saw a rather menacing movement towards him from the body of the crowd. Then, evidently none too sure of how much power he possessed, the people broke up and began to drift back towards the city ruins.

"What's the idea?" Douglas demanded. "If ever there was an aggressive speech that was it. You're lucky they didn't go for you!"

"They're rabble, as I expected," Brooks answered. "I saw each one as they arrived. Not one high-up or scientist amongst them. Ordinary, little people who stick in their own petty ruts from the cradle to the grave, the type who jump at the chance to live for nothing on somebody else's efforts.

"They thought they had found the Promised Land when they arrived here. Now I think I have changed their viewpoint. Had there been any intellectuals, I'd have talked differently, but to a mob like this authority is the only whip. Believe me, I know what I'm doing."

"Well, I don't like it!" Douglas retorted. "At least they are entitled to courtesy."

BROOKS' lips became a thin, harsh, merciless line.

"That kind never is," he answered. His lips set a little. "And let me tell you something, Doug—and you too, Sis, for that matter. Neither of you realize even now the value of the thing we have in our hands, the hopeless chaos that would ensue without rigid control.

"I've got the labor I need and science of the *nth* degree. I'm going to use it, mould it, build it, and no silly sense of restraint or idealism, or that cock-and-bull nonsense about a rightful heritage, is going to stop me."

With that he turned away decisively and began to strut in apparent seven-leagued strides towards the city ruins.

"I think we had a good idea when we concealed the truth about that underground arsenal," Douglas said thoughtfully, gazing after him.

"That makes two of us!" Vera's voice was angry. "He's behaving like an idiot!"

"Not an idiot, dearest. He's too clever a man for that. He simply realizes that he has tremendous power and means to use it. That has been the failing of ambitious men down all the ages. He has got to be stopped, if only for his own good. You and I have a say in this, too. We were in at the beginning."

"But since he gives the orders and has all the science, what can we do?"

"I don't know yet, but my original idea of the people coming here to work out their destiny as they wish, leisurely and with mutual understanding of the problems, has got to come about somehow even if I have to use force to make this aggressive brother of yours see sense. Well, that's ahead of us. Can't do anything right now except have dinner. Come on."

CHAPTER XIII

The Widening Rift

DISCONTENTED applicants soon learned Mason Brooks' Labor Direction Bureau consisted of a portable table at which he sat, and a mathematical machine standing on three legs beside him. This astonishing contrivance, powered like most other things from the central tower, noted down every detail of the applicant—height, weight, muscular power, size of brain, intellectual development, and so forth—and within the space of ten seconds disgorged a square piece of metal foil stating exactly what kind of work the applicant should undertake.

The one word "Driller," "Machinist," "Welder," or whatever it might be, was in the language of the master race, of course. but with very few exceptions Brooks understood them. He had had plenty of time by now to discover the meaning of single words. though the language as a whole, as he had found it in the records, was highly complex.

Learning the details of the two thousand applicants was a job which took four days

in itself, for the name of each had to be written by Vera onto the card of that person's potential capacity, but the actual assignment of work was far harder.

It took nearly a month of planning on Brooks' part to decide who fitted into what. Finally, though, he managed it and had the satisfaction of knowing that every man and woman was in some way employed in the job of rebuilding the city. There were no wages. It was either work or starve. That more than one of the victims was highly resentful was perfectly obvious.

But the physicist was satisfied. He had nothing to do now but watch the ruins being gradually cleared away and the foundations of a new city being laid. Around the demolished walls of the machine-halls new skeletons were springing up, one person to each marvelous machine, and hundreds of different varieties of apparatus being used. Here, in this process of machine control, Brooks revealed the subtle depths of his plans.

Knowing that concentration by one person on one machine must mean the discovery of every detail concerning the contrivance, he saw to it that a written report was handed in to him each day by each worker about the machine's behavior. So, by degrees, he began to amass a vast quantity of information on each machine's working, for study when time permitted. In other words his old grandiose scheme of each worker not knowing what the other was doing, while he himself mastered the entire setup, was showing signs of a vigorous rebirth.

Douglas, though, was by no means idle. Though he was not actually a worker, he pretended that he had much to do to determine the nature of the instruments in the observatory. From here, away from Brooks in the adjoining main hall, it was only a short trip in the oddly foreshortening distance to that other hall where lay the entrance to the underground arsenal.

Here—when he could be sure he was not being observed—for so far the workers had not started on this section, he brought his rather circumscribed scientific knowledge into play to try and discover how the underground armies were controlled. It took him nearly a dozen visits before he realized that their control was from below and had nothing to do with the switchboards above.

This revelation, and the discovery that the floor trap could also be shut by a counter-lever from below, gave him satisfaction. If ever he needed to use this mighty army to curb Brooks' too high-flown ambitions, he could do it safely, out of sight in the underworld, only opening the trap when he was ready to attack. Had it been otherwise it would have been impossible for the upper hall contained, of course, all the other deadly sources of attack of which Brooks was fully aware.

To find that the control was below, and to know how it worked, were two different things, though. Whenever he could, Douglas took Vera with him and together, the trap closed behind them, they spent odd hours deciding which switch controlled a certain area or machine.

They had light too to work by, for since the advent of the central power tower cold light globes had come into being, drenching the remotest corners of the underworld in shadowless brilliance.

Indeed the place was so enormous that it took them many weeks to determine fully its extent, and in the process they found that it harbored even more things than robots, 'planes, and tanks. There were also queerly-fashioned guns, screen-projectors which Douglas assumed would emit radiant energy, and in one department were hundreds upon hundreds of metal cases filled with tiny gray ovoids fitted with detonator caps. They could only be bombs, and from their smallness presumably utilized the shattering power of atomic force.

AT THE furthest extremity of the immense cavity they discovered yet another opening in the roof, to which the floor rose gently. A lever shifted the trap and they emerged to find themselves in open plain near the sea, the city ruins so far away in measureless distance that they were out of sight.

"This is just what we want," Douglas declared, on the morning they made this discovery. "Mason can never interfere with us if we keep this a secret. Obviously the city at one time extended even this far, but whatever machines there were here have been removed."

He pointed to the dusty ruins of collapsed walls, and then to the solitary lever remaining for the trap. It moved clumsily under his efforts. He had to shift it back and forth several times before there was any ease of movement. Then, as in the case of the pre-

vious lever he had found, he unscrewed it and hid it beneath a distinctive piece of masonry.

"You seem to be pretty pessimistic over Mace's ambitions," the girl remarked presently, as they began to walk slowly in the direction of the distant city ruins.

"Can you blame me? He's revealed exactly what he intends to do, and I just don't intend to allow him. We may come to blows over our varying policies finally, and I'm not deluding myself into thinking that he'll be content with mere words to prove he is right.

"Mason will probably use force. If so, I intend to be ready for him. I'm more glad than I can say that we've found this secret entrance to below. We'll never be interfered with, and we can throw away the lever controlling the other entrance. In time we'll figure out how all that other underground stuff works."

"Yes, I suppose it's the only course," the girl admitted. "Funny thing how you men always want to start fighting. You won't believe this, I suppose, but all I really want is to go back home, have my eyes put right, and live like a normal girl with seven million dollars. This place doesn't interest me a bit. It's too fantastic, too diabolically clever!"

Douglas smiled and gripped her arm gently.

"I'll fix your eyes yet. I give you my word. Either here—or back home. All depending on which way the wind blows."

With the passing of eight weeks Douglas had the time, with Vera's assistance, to solve the problems of the arsenal. Hard study and trial and error showed him how to make the robots move, how to control their weapons, how to pilot the airplanes and drive the tanks, how to operate the radiant-energy screens.

The inner forces controlling them he did not understand, but the matter of maneuver and mobility was no more difficult than guiding an automobile in a given direction, once he got the hang of the remote-control panels.

Since the panels possessed television eyes which in turn recorded the exact movements of every robot, tank, and plane he felt he could, if the grim necessity arose, handle a whole war from a sitting position before the switchboards.

He said not a word to Mason Brooks needless to say, and neither did Vera. In fact the physicist was too absorbed in his own affairs to be much concerned with other activities anyway. One day, however, he must have wondered how they spent their time for as they sat at dinner in the rebuilt building they had made their headquarters he asked a question.

"Taking you a long time to find out what the lenses and instruments in the observatory are for, isn't it, Doug?"

"My science doesn't equal yours," Douglas answered. "In any case I am not devoting myself to it exclusively. I've been doing a lot of thinking, trying to plan out a new pair of eyes for Vera here. She can't go on with double vision indefinitely."

"No, I suppose not." The physicist reflected for a moment. "But why try and devise a pair of normal eyes? Why not a pair modeled on the style of the fourth-dimensional eyes our ancestors possessed, using the *plica semilunaris* in its full range?

"Think of what that would mean! Vera would be the first human being since the Outcasts to understand this plane properly, to see it as it should be seen."

"I's I—your sister—you're talking about!" the girl objected. "I'm just reminding you in case your think I'm a guinea pig."

BROOKS raised his eyebrows in surprise.

"But you want to help, don't you? Since another operation will have to come sooner or later it may as well be to some purpose. What is the use of having just a pair of ordinary eyes? You'll be as blind as the rest of us to the fourth dimension's real meaning. On the other hand, with the change, you could become really useful.

"As it stands, your only usefulness lies in being able to see two planes at once, but as we grow in power here that won't be a necessity. After the operation, you can occupy a really high position by being a genuine four-dimensional-eyed woman."

The girl did not say anything. It was obvious that her brother's utter disregard for her feelings had shocked her.

"I am not going to make such a pair of eyes, either for the sake of your ambition, or any other reason," Douglas said in a level voice. "Even if I could make them, which is next to impossible without drawn specifications or at least a close study of the lenses involved.

"Vera is going to have normal sight, the

same as you or I. And in case you've forgotten it, I'm intending to marry a normal, very attractive girl and not a scientific freak doomed to work herself to a frazzle just to further your ends."

Brooks grinned.

"Okay. That's plain speaking. It's the way I like it. I confess though that I don't understand why you throw away such golden opportunities. Personally I would never marry an ornament—and since no woman within my experience has ever possessed a fraction of brains, I'm a bachelor—thank Heavens!"

He got to his feet and flexed his capable hands.

"Well, work to be done," he said. "We're getting this city very nicely into shape, even if I do have trouble at times."

"Trouble?" Vera questioned. "What trouble?"

"If you stayed around to help instead of wandering gosh knows where, you'd find out! One or two workers—men, and bone idle—have been slacking on the job. I had to give them a dose of paralysis to warn them. Unpleasant for them to have every muscle locked tighter than an atomic system, of course, but they asked for it. They've come to heel since. Well, I've got to be off."

He turned to the door, then stopped as Douglas jumped up and caught his arm.

"Wait a minute, Mason!" There was a grim hardness in Douglas' face which made the physicist elevate an eyebrow. "I don't think I heard you aright. Do you mean to say you punished those poor devils with paralyzing machines?"

"I do," Brooks assented coldly. "Any objections? Or have you forgotten that I'm the boss here?"

"I haven't forgotten anything, but I realize that with so much power around you, you are in danger of losing your head. If you start punishing people in that way, there'll be a revolution."

"I should worry." Brooks shrugged. Then withdrawing himself from Douglas' grip, he added, "Do me a favor, Doug, and concentrate on your own job. I'll handle my own affairs."

He turned and went out, but struck with a sudden thought Douglas again stopped him.

"I'm stuck for labor," he explained, as the physicist came back to his side. "I can't work out all the details of the observatory without assistance."

"Then why didn't you ask for it before?" Brooks demanded. "You can have fifty, a hundred, two hundred men or women if you want."

"A hundred men and a hundred women will suffice," Douglas said, thinking.

"Okay, I'll have them report at the observatory ruins in thirty minutes, and see that you keep them up to their work."

With a nod Brooks went on his way at last towards the dark mass of workers swarming over the masonry of the newly rising city. Douglas looked after him. He turned as Vera came to his side.

"What on earth do you want labor for?" she asked curiously.

"Because there's trouble coming," he muttered. "I'm going to take one last chance and try and show Mason where he's wrong. I intend to treat the people who work for me as human beings. They will be bound to tell the folks who work for Mason and that will start comparisons and maybe bring things to a head. Mason will then either have to climb down, or—"

He left his sentence unfinished and caught the girl's arm.

"We'd better get over to the observatory and deal with the people as they come."

IN SILENCE they went across to the twin buildings of machine hall and observatory. On the way they passed Brooks in the midst of his workers, giving sharp instructions. Already a file of men and women was moving towards the adjoining observatory. By the time they had arrived Douglas and the girl were in position by the telescope, awaiting them.

Douglas made a note of each one's capabilities and then surveyed them as they stood waiting. He could not help but notice the signs of strain and overwork on their faces.

"All you have to do, is study each machine and instrument here and see what use you can make of it," he said quietly. "When you have found out all you know let me have your reports."

"How long have we got?" asked one of the men in a grim voice.

"There's no time limit," Douglas told him. "Nothing worth while can be learned in a hurry."

The men and women glanced at each other in surprise.

"But Mr. Brooks sets a time limit on everything we do," one of the women remarked. "If it isn't done in that time he gives

the women extra work, or else punishes the men."

"You are not answerable to Brooks here," Douglas replied. "I am in sole charge of this section."

Then he turned away deliberately. The men and women looked around them, obviously a little dazed by their unexpected good fortune. After a while they began to work on the machine or instrument nearest to hand.

For half an hour Douglas watched them tacitly, Vera beside him, then he said in a low voice.

"You take the folks on the left. I'll take those on the right. Talk to them. Let them see we value them. Give them cooperation as they've never known it since they came here."

"Right!" the girl agreed, and then off she went.

Douglas turned to the other side of the room and stopped beside an elderly man who was thoughtfully studying a spectroheliograph.

"Everything okay?" he asked, with a pleasant smile.

"Eh?" The man started nervously. Then in a quick voice he answered. "Yes, yes, sir—everything's okay. I'm not very quick at my age, I'm afraid. This is a bit different to watchmaking."

"Take it easy," Douglas interrupted. "No hurry remember."

The man relaxed.

"I'd—I'd forgotten. You're so different to Mr. Brooks. He's very—well strict. Not easy to forget it."

"You will," Douglas assured him, and moved on to the next worker. . . .

CHAPTER XIV

The Presence Returns

QUESTIONING them in a leisurely fashion, Douglas had a word with all of them on the right hand side of the observatory. This done, he left them all to their own devices and went for his usual visit, with Vera, to the underground arsenal. When they returned they found the workers lined up with their reports, waiting to be received and checked out.

Douglas took each report with a nod of thanks. When he had finally been handed the last one one of the men spoke up.

"I'd like to thank you, Dr. Ashfield, for the way you've been treating us. I'm speaking for all of us here. If there was the same fair-mindedness elsewhere, this plane wouldn't be such a bad place after all."

"The remedy is in your own hands," Douglas answered quietly. "If you don't like Mr. Brooks' way of doing things, tell him so! I'll back you up."

"That's good hearing, sir, but—well, I'm afraid Mr. Brooks has ways of enforcing his wishes. He's got scientific instruments which can crush any objections by force."

"I still say I'll back you up," Douglas replied. "You don't have to object immediately. Wait until you have a really good reason. Until then, you'll be working for me here. If you can get others to work here as well, all to the good. You'll receive fair treatment."

The man nodded gratefully and turned

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away with the men and women about him. Evidently he had given matters some thought too for the next day a hundred more workers reported for duty. At this number, however, Brooks put his foot down and no more were forthcoming. So, for a week at least, all seemed to go quite smoothly without any signs of friction from the workers under Brooks' direct control, though all of them knew by now that he was the sole reason why fear and lack of cooperation were present.

There were, of course, certain spirits who agreed with him in his methods—or else it was that they were smart enough to play along with him in the hope of getting something out of it later. These few he placed in charge of small groups and the consequent relaxation of labor for them was just what they wanted.

Then came the breaking point. Douglas and Vera, in the observatory, were busy amongst their own team of workers one morning when the noise of angry voices from somewhere outside reached them. They had hardly moved towards the observatory's outer door before a woman worker came dashing in, her eyes wild in fright, blood welling from a vicious cut across her face.

"Doctor Ashfield—Sir! Please! Help me!"

She caught imploringly at his arm and then took refuge behind him as a woman entered the observatory abruptly, a short-nosed whip with a fine metal lash in her hand.

"Don't let her hit me again!"

The woman squeezed herself against Douglas, covered her bleeding face with her hand.

Douglas put a reassuring arm about her shoulders, then turned to face the female guard who came slowly to a halt, her square face set hard.

"I'm sorry this had to happen, Dr. Ashfield," she said briefly. "This woman went crazy and dashed away. She had no right to bother you with her nonsense."

"She had every right—and you are trespassing on my territory!" Douglas retorted. "Leave at once!"

The woman half turned then paused as there came a sudden surge of workers through the doorway, their shouts clearly showing their anger. Before Douglas could do a thing to prevent it they had seized the woman guard in their midst and bundled her outside.

"They'll lynch her," Vera gasped.

Douglas thrust the injured woman into the girl's arms and dived for the doorway. By sheer main strength he fought his way to the center of the disturbance where the female guard lay on the ground, her clothes torn, her face and neck scratched and cut. With a jerk Douglas got her on her feet. Then Brooks himself came pushing through the crowd.

"What's going on here?" he demanded, glaring round. Then at the sight of the woman he gave a start. "They did this to you?"

"And with good reason," a man retorted hotly. "She hit my wife across the face with that whip of hers. I saw her do it. This sort of thing has gone far enough. We're quitting!"

BROOKS looked about him, pale-faced, his lips tight. Then he turned as from the observatory came the whipped woman herself, blood oozing from the cut on her face. Vera helped her gently forward. Behind them came the workers under Douglas' control.

"You're getting things into a nice mess with your force policy, Mason," Douglas snapped. "It's got to stop!"

"Oh?" Brooks smiled bitterly. "It's got to stop, has it?"

"What do you other workers stay with this slave-driver for?" shouted the elderly man who'd been a watchmaker. "Work for Doctor Ashfield here and get yourselves a square deal!"

There came a grumble of rage from the gathered people. Brooks glared round on them.

"Because a woman guard has been overzealous is no reason for such hostility," he shouted. "I've only been firm in my rules for the common good."

"Aw, shut up! We're not working for any tinhorn dictator any more!"

There were surgings and movements in the crowd. Brooks stood his ground, and nobody attacked him directly though they came dangerously close. Soon even he could see that all but perhaps a hundred or so of the workers drifted over to the spot where Douglas and Vera were standing.

"This is very interesting," Brooks said at last, trying hard to keep his fury under restraint. "Out of some two thousand people I have a hundred left who are loyal to me. I suppose you think, Douglas—and you too,

Sis, that this is a resounding triumph for your precious policy of share-and-share-alike?"

"It's a triumph for ordinary decent people who refuse to be kicked around, anyway," Vera answered candidly.

The physicist looked at the grim-faced men and women who had elected to stay with him, chiefly because they knew just how much power he could wield when necessary.

He gave a cold smile.

"I never thought that when we set out to rebuild this city it would come to a parting of the ways," he said. "Since it has to be I'm not shirking the issue. In a scheme as huge as this there just can't be two masters. It has either got to be run my way—or yours, and the people must follow the victor."

"How do you propose to put it to the test?" Douglas snapped.

"You'll see! You know I have the means of making my will obtain. You have nothing but some one thousand nine hundred men and women who won't be able to stand five seconds against scientific destruction."

Brooks paused and reflected for a moment. Then his mouth set harshly.

"I'll give you until ten tonight, Douglas, to think things over. By that time you workers must come back to me, and your infraction will be overlooked. If you don't come back I'll give you such a terrible time you'll finally come crawling on your bended knees."

He turned away with an impatient movement and went striding off to the small headquarters building with his hundred devotees trailing after him.

Around Douglas and Vera a silence dropped, save for the self-piteous sniffing of the woman who had been whipped.

"You'll help us, I suppose?" the woman's husband asked bluntly.

"How can he?" demanded another. "Brooks has all the science. Best thing we can do is wreck the machinery and stop him that way."

"You can't wreck machines like these," Douglas said quietly. "They are foolproof. But I gave you my word I would stand behind you and I meant just that.

"I want you all to go to your homesites and collect provisions for about three days. Then this afternoon you will join Miss Brooks and myself on that plain over there. I have a surprise for you. Since force against force is the only answer to this deadlock so it must be. So—we meet again this afternoon . . . "

Mason Brooks' belief in his own rightness —and therefore his complete disregard for the movements of the renegade workers during the afternoon—lost him the chance of observing what happened to them. He certainly noted the general exodus towards the plain in the dim distance, but since watching them was like gazing through the wrong end of a telescope he ceased to be interested in them.

TOWARDS four o'clock he had made an end of his plans to deal with the situation if agreement was not forthcoming, and his first act was to look towards the plain. He beheld not a single trace of the workers who had been just visible as a remotely distant blur of black.

For an instant suspicion crossed his mind, and then faded. The most likely explanation was that they had all run for it. In that case they would be back, and forced to heel. So he spent the rest of the late afternoon and evening showing his hundred followers how to operate the various ray-projectors and weapons of destruction in the armament hall.

"With these we can deal with any emergency," he explained. "I will give the order when to use them, and it will only be in the event of genuine attack. I want every worker I can get who is willing to return. This confounded strike has upset my schedule!"

On this note he left the matter and waited, consulting his watch at intervals.

Far below him, a mile and more, the workers who had followed Douglas and Vera were getting over their first pleasurable shock of discovering a mighty armament dump at their disposal and were learning how the robots, planes, tanks and projectors worked

"Not that I like any of it," Douglas confessed, as his watch showed it was seven o'clock in the evening. "But if it has to be civil war, that is the end of it. Mason Brooks is one of those kind of men who is not wilfully vicious but misguidedly ambitious. He's got to learn—by hard knocks. And at ten o'clock we'll show him."

The workers in the huge cavern murmured an assent. Then at Douglas' order, they settled down to a meal. In this manner another hour passed. From that time on until ten o'clock was a period of intense mental strain for Douglas. He realized that many things might happen.

He might make mistakes in controlling the huge robot system of warfare. Or, to spike his guns, Brooks might cut the power of the central tower and thereby bring things to a halt. But since Brooks didn't know what was afoot anyway, and because stoppage of power would queer his own plans, too, this didn't seem a likely possiblity.

The only thing was to chance it. At five to ten Douglas made the first moves. He had the trap opened onto the plain, and he sat by the switchboard in readiness to throw the master control. Vera was beside him, and stretching back into the distances, alert and intent, were the workers.

The second hand of his watch flicked round —9:56 . . . 9:58 . . . 9:59 . . .

"Okay!" he snapped.

He waited, but nothing happened. He found himself gazing at dial needles which had dropped to zero on their scales.

A second or two later, the lights in the hall went out and left only that dim oblong open to the starry sky about two miles away. The big heating grids against the walls were paling into pink bars and thence fading into blackness.

The silence was intense for a moment, a silence born of utter surprise and disappointment. Then shouts came out of the dark.

"The power's off!"

"This is Brooks' doing!"

"He's found out about us!"

Douglas sat trying to reason the mystery out. He felt Vera pressing against him as the people surged forward past her into the open air.

"Can't see how he could have found out," Douglas said at last, puzzled. "Nor can I imagine why he'd cut the power and so kill his own chances. We'd better get outside and see what's going on."

He got up and with difficulty found his way along the aisle to the slope leading to the oblong opening. Vera clung to his arm, and the people, chattering and arguing among themselves, followed him out under the fantastic stars.

In the dim distances across the plain the ruins of the city were utterly black. This in itself was unusual since it had been Brooks' practise, since the restoration of power, to have the powerful lights blazing from all sides.

"May be a trick," Vera warned. "Better take it easy."

"We'll all stick together and head for the city," Douglas decided. "Come on."

They began to advance slowly in a tightly packed body, but before they had covered half the distance under the uncertain starlight, a black mass loomed ahead of them, and with the suddenness characteristic of this weird place it merged into Mason Brooks himself and his hundred satellites.

"That you, Douglas?"

HIS sharp, authoritative voice floated out of the gloom as both parties paused expectantly.

"Yes," Douglas assented. "What have you done to the power?"

"The power? What should you need power for?"

Douglas was silent for a second or two. He had forgotten that the physicist knew nothing of the arsenal. It was Vera who spoke next and cleared up the uncertainty.

"We needed power for a robot army to teach you a much needed lesson, Mace. Just as we were about to use it, the power failed."

Brooks came forward in the gloom until Douglas and Vera could faintly discern his features.

"So you had a robot army, eh? So that was where you vanished to. I guess you must have been smarter than I imagined. Well, it didn't do you much good, did it? And I didn't cut off the power either. I was all prepared with my defensive weapons to ward off whatever you sent against me—and I only expected workers—but nothing worked and the lights went out! Not a single power unit is in action, not even the self-powered machines. Even batteries have gone flat."

"All power couldn't just fade out like this," Douglas protested, as mutual antagonism was forgotten for the moment in face of this major problem. "It must have—"

He could not finish his sentence for he was drowned out by a sudden cry from a woman in the gathered hundred behind Brooks.

"The sky!" she shrieked. "Look!"

Every eye gazed upwards, and in spite of himself Douglas felt a curious little thrill pass through him. Something wraith-like, as impalpable as the Milky Way, was curling like vapor out of the depths of space. It swept earthwards with an incredible velocity, blotting out the stars for a moment. Then upon every one of the watching people there settled a sudden and immovable paralysis,

the crushing load of a supermind probing into every brain.

"Fools! Descendants of fools!" the voice of the Presence came to their consciousness. "In thousands of years of evolution you have not even yet learned how to handle the powers of science. Idiots! Little brains! You had the keys of infinite progress in your hands. You were rebuilding the city—albeit not entirely by methods which met with our approval—and then what? You disagreed. You forgot your aims, forgot everything, suddenly realized you must use scientific power to destroy each other so that one or other of you could rule.

"You, Mason Brooks, were the cause of that. But to single you out as the prime criminal would be pointless. All of you are to blame—squabbling, fighting, preparing to destroy machinery which it took cycles of careful thought to create, all so you might assert your own miserable, petty wills."

The scathing bitterness of the mental voice had such power behind it that it wrenched every nerve and organ. It went on:

"We decided that you should not be allowed to do it. You are not fitted to inherit this great four-dimensional plane with its mighty scientific secrets. You have much yet to learn before you can even approach the attainments of the lowly people of the world you call Mars.

"You are but barbarians who have many generations of refinement to undergo before you can even hope to be admitted into the anteroom of the vast universe we hold in trust for you. Yes, we decided that you are unworthy."

"We placed a negative influence over the machines. Mind is ever the master of matter, electrical forces, and elemental powers. We willed that not a single machine should work, that power be taken from you."

Again the pause and the dreadful silence indicative of vaster thoughts to come.

"You have failed. You will have to learn how to defeat greed, personal power, mad ambition, before you are even worthy to move a single power switch in this plane. Bereft of power you could die here, but that is not our wish.

"We have decided that you shall be returned to your own plane, there to remain until sense, and the refinement of centuries, teaches you to handle an exquisite gift with reverent care."

The voice ceased—but the sense of paralysis increased to awful, crushing proportions. The people cried out in sudden anguish. Douglas felt Vera clinging to him. He could hear Brooks cursing the Presence huskily.

Then suddenly there was a blaze of light which seemed to consume the universe. At the same moment the ground shook under the impact of a myriad of thunders. There was a mighty rush of air, a blast of intolerable heat. Douglas went flying through emptiness to land on his face with a mighty detonation roaring in his ears . . .

CHAPTER XV

Eyes Without Vision

HOURS LATER, Douglas found himself lying amidst rubble and broken stone, pieces of debris falling upon him even as he stirred. For a second or two he hardly moved. After awhile the distant sound of ambulance or fire-engine sirens came to him and he made an effort and looked about him.

He gave a violent start. At a distance were the gleaming lights of New York's familiar buildings, but around him for an area of nearly two square miles there was a shambles of fallen stone, crumbling plastic walls, and fantastically twisted girders. An explosion of inconceivable power had occurred.

As he clambered unsteadily to his feet he could see other people getting up too, moving bewilderedly, trying to find out where they were. A hand gripped him. It was Brooks, his pale face streaked with dirt and blood, his usually immaculate hair hanging lankly about his forehead.

"Where's Vera?" he demanded hoarsely. "Help me find her."

Douglas did not need to be asked twice. Nor did they have to search for long by themselves. The ambulances and fire engines were soon on the spot, and with them came a huge army of sightseers who gazed wonderingly in the light of the hastily erected floodlamps upon a battered, bruised and confused file of survivors being interrogated by the police.

Ignoring all the commotion about them, Douglas and Brooks kept close to each other, here and there coming across a dead body, here and there releasing an injured man or woman. When this happened they called an ambulance man to take charge of the victim.

At last they discovered the figure they sought for, sprawled on her back amidst the fallen girderwork and stone. Fortunately Vera was not buried, but she had certainly been badly mauled. Her clothes were torn, one arm was lacerated, and—

"Good Heavens!" Douglas whispered, as the floodlight caught her face and the ambulance men came up. "Look!"

The physicist stared dumbly. Those extraordinary artificial eyes were splintered—both of them—their lenses powdered irreparably as though they had been hit with a hammer. Neither man spoke—the shock was too great. They watched as the girl was placed on a stretcher and carried away. Then they followed mutely to the ambulance in which she was placed.

They were about to climb in and keep her company to the hospital when a police inspector held them back.

"Particulars from you two gentlemen, if you please. What happened here? Nobody seems to know." The officer stopped, gazing at Brooks. "Why, isn't it Mr. Brooks? The man who discovered the fourth dimension?"

"Yes, and the man who got thrown out of it too!" the physicist replied acidly. "That's what caused this havoc."

"So that was it! We thought it was a chemical explosion. The Chemical Institute had storerooms here you know. Two whole blocks of buildings went skywards. Is that your sister on the stretcher there?"

"Yes, and we're going with her." Brooks turned away impatiently and climbed into the ambulance with Douglas behind him. But, determined to finish the job, the inspector followed them into the vehicle.

"This sort of happening takes the shine off things, sir," he commented, as the ambulance doors were slammed. "You were all set for being feted when you returned from the dimension—but after this destruction and loss of life I'm not so sure."

"Feted?" The physicist took his troubled eyes from the unconscious girl. "What the devil for? I was as good as bounced by the City Scientists for my work."

"Yes, but you proved your words afterwards. Or rather Senator Goldman, Walbrook Dean, and even the President did so by means of public speeches. Then we all saw two thousand people melt into the fourth dimension in Central Park. That couldn't be called a trick, sir. Walbrook Dean had to admit the mighty discovery you had made. The President ordered that you be acclaimed a great scientific discoverer when you returned."

Brooks grinned crookedly.

"Well, I have returned! The rest is up to the people and the law!"

The inspector nodded, took down the particulars Douglas gave about himself. By the time this was finished, they had reached the city's main hospital. Silently the two men followed the girl's stretcher-bearers directly into the operating theater. This was as far as they were allowed to go. The doctor in charge sent them out into the anteroom once he had made his examination.

"She'll live all right," he announced. "At least you have that to be thankful for. Concussion chiefly, and that cut arm. Soon fix up those troubles. What worries me chiefly are her eyes. Offhand I'd say she has some peculiar form of cataract, yet on the other hand they look like smashed unbreakable glass. It's most peculiar—"

DOUGLAS interrupted the surgeon. "I can explain it. I'm Douglas Ashfield, stricken from the register by the Ophthalmic Council after giving Miss Brooks two artificial eyes. Those are the ones I made for her. Smashed completely, I'm afraid."

"Ashfield!" The doctor gave a start. "Why, of course. I remember the case. And I couldn't see why you shouldn't be right. Anyway, you must have been since these are the very eyes."

"Leave them just as they are," Douglas instructed. "No fragments will dislodge into her brain. I've made them incapable of that. Let me know when you have patched her up and restored her to near-normal. The eyes I'll try and fix myself."

"I'll do that," the doctor nodded. "And good luck!"

He turned back into the operating theater and the two men began to walk slowly down the corridor, side by side. They had nearly reached the front exit before Brooks made a comment.

"You know what happened, of course? That explosion?"

"Not exactly. But I imagine the Presence had something to do with it."

"He—they—it, what ever it was, must have forced both planes to coincide for a brief second, which caused that appalling havoc. In that moment all traces of the four dimensional atomic arrangement of our bodies was

altered back to its normal status and we returned here with devastating force."

"So that was it. Well, what happens now?"

"We go back there at the earliest opportunity, of course."

They came to the front entrance of the building, and paused.

"You serious?" Douglas demanded.

"Certainly I am. You don't think I'm going to let all that science pass us by, do you? I have the transition machine for doing the job in my laboratory, remember. We'll rest awhile first, and you'll get Vera right again. And don't forget that she must have that double vision again. It's useful. Makes it easy for us to see what's going on in two places. Back we are going, whatever happens."

They went out into the street and began to walk towards the city center, regardless of the dried blood on their faces and their filthy appearance. The things that had happened to them had blunted all remembrance of convention. In any case there were not many people about to see them at this hour.

"I suppose that we should go back," Douglas said, after due reflection. "But we'll have to act differently when we get there, Mason. Squabbling as we did. We spoiled it!"

Brooks gave a faint grin.

"I suppose we did really. But I'm not going to play second fiddle when I do go back. I'll work without labor. I'll get those robots you found to do it. But I am going to have that science! Now let's forget it for a moment and get a bath, something to eat, and then some sleep. We'll tackle things better in the daylight."

Douglas nodded and they said no more until the Brooks home was reached. The physicist let himself in with his own latchkey and before doing anything else went straight through to his laboratory. He switched on the light and took three paces towards his transition machine—then he stopped dead. Douglas, immediately behind him, paused too and stared fixedly.

The machine was no longer a magnetic device magnificently created, but a burned out hulk of twisted metal-work and shattered wires and tubes.

"What the devil!" Brooks shrieked, and swung round violently just as the manservant entered sleepily in his dressing gown.

"Oh, it's you, Mr. Brooks. I heard sounds."

"Who's been tampering with this machine?" Brooks raved at him. "Who's been in here during my absence?"

Jefferson gazed at the ruin and blinked. "Why, nobody, sir. You gave me those orders. Only you had the key. Maybe that explosion tonight did it."

"Explosion, rats! Somebody has deliberately wrecked this machine!"

"I—I just don't know, sir." Jefferson stood awkwardly waiting as Brooks narrowed his eyes sharply.

"Okay, you can go back to bed," he snapped.

As the man shambled out Brooks eyed Douglas grimly.

"Whom do you suspect?" he asked slowly.

Douglas shrugged.

"At a rough guess—the Presence!"

"Exactly. The Presence! That all-knowing, all-destructive, all-encompassing mass of confounded interfering mind!" Brooks broke off and breathed hard. "I shall have to build another one, that's all. If this has gone, it's a certainty those others which were used in Central Park have gone, too, even if they didn't burn themselves to scrap metal making the transitions for the two thousand. Yes, Vera can describe one to me, as she did before. Once you have made those eyes for her."

DOUGLAS' eyebrows went up in surprise. "You didn't make a formula then?"

"No need. It was described, so I built it. I was too excited to bother with details. Maybe it was silly of me. About these eyes for Sis—How long will it take you?"

"Depends on the damage. Complete eyes would take me ten years. If the damage lies in the synthetic cornea, as I think it does, I can cure it in three weeks."

"Good!" Brooks clenched his fists. "The moment she has recovered consciousness, get busy!"

Early the following morning the police were the first callers. They added particulars to those already taken, and from their observations neither Brooks nor Douglas was left in doubt of the fact that they would be held responsible for the explosive catastrophe of the previous night.

Immediate arrest was prevented, however, by the special order of Walbrook Dean, who also ordered a thorough search into the scientific implications first. With this purpose in view, he summoned Brooks to his private chambers for an interview.

While Brooks grudgingly complied with the order, Douglas headed for the hospital to see Vera, now fully conscious again. He found her in bed in a private room, her head and lacerated arm bandaged and her health apparently normal again if the vigor of her voice were any guide.

"Doug!" She gripped his arm as he came to the bedside. "You are not hurt—or so I'm told."

"So you can't see me?" he asked quietly.

"No. Everything's gray, like a thick, milky mist."

He gripped her hands tightly.

"Then you can see a grayness?"

"Nothing else. And I can also see variations in light and shade, when somebody blocks the sunlight for a moment. But actual vision has gone. Just—just what does it mean?" she asked, her voice low. "That I'm blind again?"

"For three weeks or so, yes. The light you can see now shows that only the surface of the cornea has been shattered. The eye apparatus behind it is undamaged. Otherwise it might have taken me ten years to fix it up."

He felt her give a little shiver.

"What happened exactly?" she asked presently.

As briefly as possible he told her, and added a few words on the destruction of her brother's machine.

"But surely, Doug, Mace isn't still trying to get back to that horrible place?"

"I'm afraid he is, and I can't blame him. In spite of what happened, it is too wonderful a land and far too scientific to be lost. We can go back there, very much humbled, once I've fixed you up with two visions again."

"Just so that I can start to describe machinery to Mace! I don't want to do it. I want normal eyes and peace of mind. Please."

"It's a selfish view," he murmured. "I have still my own idea of giving everybody their rightful heritage to put into practise, you know. You have your part to play."

He patted her hand as she remained silent.

"Now I've got to be going," he said gently. "I must get to work on those new lenses right away. When you're ready to leave the hospital, I'll see you home. Or else Mason will. He's been called for an interview with Walbrook Dean. That's why he didn't come along with me to see you."

Soon after Douglas left her. She was still protesting against Mason's scientific ambitions, however. As he went on his way pensively through the hospital hall, he found his arm suddenly gripped.

"Why, Dr. Hurley!" he said to the man who had stopped him. In some surprise he took Hurley's extended hand and shook it.

The Chairman of the Ophthalmic Council eyed him levelly for a moment.

"Glad to see you again, Ashfield," he said briefly. "I've been doing a lot of thinking about that operation you performed on Miss Brooks. That four dimensional business brought things to the front. Seems to me that, even if you did give her four-dimensional vision, you at least gave her eyes, of sorts. You overcame her blindness."

"Good of you to admit it," Douglas commented, uncompromising.

"Oh, I don't blame you for feeling hurt! I've been talking to the head surgeon of this hospital. He came to see me last night after Miss Brooks had been brought in here. He insisted that I come and look at her artificial eyes, despite their damaged state. I did, and —" the Chairman cleared his throat—"you did a good job, Ashfield. There's a lot to be said for your courage in throwing away your practise to risk doing it."

"Just what is all this leading up to?" Douglas asked grimly.

THE Chairman of the Opthalmic Council leaned forward, his face intent.

"This. Can you cure this girl again? Can you fix her up with normal eyes, and not double-visioned ones?"

Douglas was silent for a moment.

"And if I did?"

"If you did, and her eyes responded to every test we could make, we would not only admit you back to the Ophthalmic Council with a public apology, but would also confer on you the highest degrees the council can give. We would also put you in charge of a laboratory specially devoted to the making of Ashfield Synthetic Optics. Your name would rank among the immortals of science."

Douglas eyed the Chairman pensively and made a quick gesture.

"After all, Ashfield, it means something, doesn't it? Full restitution! I would not have gone out of my way to find you, as I have this morning, if I did not mean it. I was told at the Brooks' residence that I'd find you here."

Douglas' mind strayed for a moment to

the recollection of that huge power awaiting the human race in the fourth dimension. He gave a faint smile.

"I cannot guarantee that the eyes will be normal," he said. "They may still see in two places at once."

"That will be a pity for everybody," Hurley sighed. "Anyway, do your best and let me know how you get on. When do you start on these optical repairs?"

"Today—the moment I get home."

"I'll drive you there. My car's outside."

CHAPTER XVI

Glory That Was

ODDLY enough to Douglas' surprise he found Mason Brooks waiting for him when he reached his home. The physicist was pacing impatiently up and down outside the front door.

"What news?" he asked, as Douglas fished for his key and then slipped it in the lock.

"I can ask you the same thing," Douglas answered.

Brooks stared after the retreating car, and frowned.

"Was that Hurley of the Ophthalmic Council?"

"It was he all right. Come along in."

Douglas entered the hall and walked through into the rear room of the house which he used as his own testing department and lens-manufacturing laboratory.

"Hurley has offered me full restitution, honors, and a name in lights," Douglas said, throwing down his hat. "If I can make Vera see again."

"Funny how we both seem to be bringing these higher-ups to their senses," the physicist mused. "Walbrook Dean is quite convinced of the existence of the fourth dimension after what has happened. Or else it is that he's afraid to admit otherwise for fear of public opinion. Those vanishing folk in Central Park apparently made us candidates for an inscription in bronze."

"So what happened?" Douglas asked.

"I have been reinstated among the City Scientists. Not as the Chief Physicist but as the head of a new department devoted to study of the fourth dimension. At the earliest moment I want to show Walbrook Dean that this dimension really exists, which I can do the moment I have a machine built."

"Does your reinstatement rely on you doing this?"

"Not at all. I'm reinstated from this moment, but I'll be better pleased if I can show that old hidehound doyen what the other plane really looks like. Needless to say all police charges have been dropped. The trouble last night is now legally called a scientific accident. Well, that's my part of the happenings. Now, how about Vera? How's she faring?"

"I can give her fresh corneas for her eyes in three weeks."

"You can!" Brooks' face lighted. "Then she'll be able to see that machine again and ultimately we can go back over there."

Douglas was silent, toying with the screws on his lens-grinding apparatus.

"My own restitution and name in lights carries a proviso," he said slowly. "Vera's eyes must be normal!"

"Normal! You—you mean blind to the fourth dimension?"

"Just that. You see the spot I'm in! On the one hand I want my vindication and to hand this eye discovery of mine to humanity. On the other hand I think we should go back over there. I just don't know which to do."

Brooks clutched his arm tightly.

"Good grief, man, how can there even be a doubt in your mind as to what you should do?" Brooks cried. "What are a few petty honors from the Ophthalmic Council compared to what we can have in that other plane? A whole universe, if we play our cards right with Vera as the king-pin. You've got to give her the same eyes as before."

For a long time Douglas stood meditating. Then he nodded.

"Okay, you're right. Now do me a favor, will you, and leave me to it? I've got to work on this job alone, give it all my concentration. You might slip over to the hospital and see Vera. She was asking for you."

The physicist nodded and hurried out. Slowly Douglas drew off his coat and slipped into his white coverall. Going over to the safe he took out the precious formula he had devised for mitonex lenses and studied it. When its details began to return to his memory, he began to get to work.

To his satisfaction the job took him slightly under three weeks, and he was then given every facility to operate in the city hospital. Dr. Hurley had had a hand in this, however, and on the day of the operation he was pres-

ent in the theater's observation balcony, staring down through plastic glass—in the company of his Opthalmic Council colleagues—upon the table below, Douglas' masked and white-garbed figure and that of the attendant nurses beside it.

The most anxiously watching person of all was Mason Brooks. Immaculate, his dark hair gleaming as it lay back from his fine forehead, he stared down in concentrated attention from the balcony opposite that of the ophthalmic experts. A little distance away from him, also watching keenly, was Walbrook Dean, his rugged face in profile to Brooks' occasional glances.

THE lights came up below in shadowless glare. There was the glint of instruments in Douglas Ashfield's gloved hands. High in the roof television eyes, telescopic-lensed, were casting every detail of this amazing operation in optics to an interested world outside.

Douglas knew better than anybody else that he was throwing away world-fame even as he worked. Made to identically the same formula, the new cornea would not give single vision but, unless the immutable law of mathematics was a liar, precisely the same double vision as before.

Vera was not under a sleep-producing anaesthetic this time. It was a purely local one with no sense of discomfort to her artificial eyes. But she was strapped down so tightly she could not budge her head a fraction of an inch.

Fixedly she stared into grayness, could feel Douglas' busy hands at work and the delicate probing of his instruments. Now and again she heard his strained voice giving sharp orders.

Suddenly one eye went totally black and a little chill stole to her heart. The other followed it and left her in a void which was infinitely dark and terrible.

"Nothing to worry about," Douglas murmured in her ear. "I have taken out the shattered corneas. You have no light-gathering capacity at the moment."

He laid the broken corneas on one side with platinum-tipped forceps. Then working with infinite care he began the delicate job of sliding the new hemispheres into position under the girl's eyelids, after which they would remain in position by the natural suction of the eyeball's own curvature. The girl felt the edges sliding unbearably against her eyelids, despite the local anaesthetic.

She gave a little cry as, with a transient stab of pain, the first cornea slipped into place and gentle, rubber-tipped fingers closed her eyelids tightly and laid wadding upon them. A brief pause followed. Then she went through the same experience with the other eye. This was closed, too, and cotton wadding placed on it and tied into position.

Straps began to unloose. She was raised gently by Douglas' arm at the back of her shoulders. Strong restorative began to burn in her throat.

Douglas waited a moment or two while the girl's nerves were steadying again and her pulse rate dropped to normal. Briskly he signaled to the watchers in the balconies. They turned and descended the rear stairs immediately, came filing into the theater.

"Excellent handling, Ashfield," Hurley congratulated. "Now for the results."

"I think we are ready," Douglas answered in quiet tones. For a moment his eyes strayed to the tense face of Mason Brooks as he stood rigid with anxiety.

The assembly waited. Douglas reached behind the girl's head and unfastened the tape. The waddings fell away.

"Open your eyes slowly," Douglas ordered.

Vera obeyed, allowed her eyelids to flicker apart. When at last they were fully open there was a little gasp from the group of oculists. Her other eyes, before the breakage, had been marvelous imitations of the real thing, but these were even better. Either it lay in the curvature of the outer cornea, or in the lights of the theater. But there was a definite translucency. They were big, gray, and wondering. She stared steadily in front of her.

"Well?" Douglas asked tensely.

"I can see—clearly, wonderfully!" she whispered. Her voice rose. "Yes! Every detail of every thing, near and far, up or down. Far better than I ever saw in my life before! Oh, Doug dearest, you're the greatest eye-surgeon who ever lived."

"Do you see double, or single?" her brother asked in a strained voice, coming to her side.

"Single, of course. Not a trace of anything else. I see as normally as you do."

Brooks stared at her, his face going whiter than usual. Just for a second an outburst seemed to tremble on his lips. Then he forced the ghost of a smile.

"I'm so glad," he said, almost inaudibly. "For your sake. I'll—I'll see you later on."

HURLEY came forward and stared into the girl's eyes fixedly.

"Hmm, seem all right to me," he commented. "Are you prepared for our tests, Miss Brooks?"

"Surely," the girl assented. "But I'd prefer to sit in a chair instead of on this table."

"Of course, of course."

She was helped from the table into an armchair. Then under Hurley's directions apparatus was wheeled in from outside. The lights were switched off and for half an hour he and his fellow wizards of the optics studied and peered until she was dazzled by their lights and lenses. At last the illumination returned and she relaxed with a thankful sigh.

"You've done it, Doctor Ashfield," Hurley pronounced, holding out his hand. "The most brilliant optical advance of the century! The whole world shall hear of this. The city will make its gratitude known to you publicly at a banquet in your honor, at which Miss Brooks of course will also be present. You will be notified of the date through official sources. And thank you, Miss Brooks, for your cooperation. Come, gentlemen."

They filed out, talking among themselves at the wonder they had witnessed. Then as the last man vanished from sight, the lone figure of Brooks came into view again. He came forward slowly, stopped at last within two feet of Douglas.

"What happened?" he asked bitterly.

Douglas did not answer. Instead he looked at the girl.

"You mean that you can only see singly?" he demanded.

"On my word of honor," she nodded. "And I'm as surprised as you are. Anyway, I couldn't fool men like Hurley and his disciples with the apparatus they've got. My vision's dead normal."

"Then what the devil went wrong?" Brooks exploded. "Don't you realize what this means? Our last chance of seeing into the fourth dimension, of getting there again, has gone! I can never remember how to make a second transition machine from memory. Doug, what have you done, man?"

"I've followed out the cornea formula item for item," he answered doggedly. "It is the exact same material, the selfsame grinding, the selfsame field of focus and circle of vision. Everything is now just as it was before."

"But it can't be!" Brooks shouted. "It's different."

"I know." Douglas rubbed his chin slowly. "Let's sum the thing up. The cornea was responsible for Vera seeing the fourth dimension. A slight aberration in its curvature altered the normal range of light-waves and she saw two planes. Now I have done the exact same formula over again, things are normal to her. There is only one possible explanation."

"Well?" Brooks rasped.

"The grinding is not absolutely identical. It may only be a millionth of a fraction out on the orbit curvature but that, in the aggregate, means a lot. There are cases where spectacle lenses are made to an identical formula, yet the wearer swears he can see much clearer with one pair than with the other.

"The fault is not in the formula. It is in those infinitesimal details—a fraction out in the mechanism of the grinding equipment, a slightly less resistance in the surface of the lens material, even the action of temperature and humidity at the time of grinding. That is what must have happened here.

"The flaw which made a view of the fourth dimension possible has not happened again. It was, correctly, an unknown factor in my formula upon which I happened by chance, an unknown factor which I may never find again unless I happen again by chance. Because, of course, I don't know what the factor is. It's something ungovernable, the outcome of a correlated series of conditions which happened that once, but which now are missing."

Douglas stopped, his lips compressed.

"We've lost the fourth dimension, I'm afraid," he finished.

Brooks clenched his fists.

"You can explain this away by everyday circumstances, by flaws in the aggregate, if you like," he snapped. "But I believe only one thing is back of it—that confounded Presence! First my machine—now your inability to reproduce a fluke of optics, to say nothing of the way Vera's eyes were damaged in the transition back to this plane. The door has been slammed in our faces and locked good and hard!"

"That's possible," Vera admitted. "And I suppose it will stay locked until we learn the meaning of sense, peace, and science."

THE physicist breathed heavily as he paced up and down.

"The thought is too much to bear," he insisted. "All that wonderful science—a whole universe wide open before us, and now we've lost it! Just a glimpse of a mighty science, gone like a mirage. The marvels of generations have been blotted out with the finality of a falling star. It's abominable and unreasonable for it to be barred to us."

"Just the same, it's gone," Vera said quietly.

He looked at her for a long moment and gradually a cynical grin spread over his lean features.

"Out of all this I get reinstatement. That's peculiar."

"And I'm famous." Douglas gave a shrug. "I would certainly have liked to have given people their four-dimensional heritage, but maybe it's a better thing to destroy the curse of blindness."

Brooks sighed.

"Well, there it is! No good chasing rainbows, I guess. But I'll work myself as never before to find a way to duplicate that machine. I'm going back there—some day! No flaw in optics is going to stop me. And when I do—"

He broke off as he caught the eyes of his sister and Douglas fixed upon him.

"I know, ambition," he said dryly, nodding. "Well then we'll forget it right now. At least we can celebrate four achievements—two reinstatements, new eyes, and a forthcoming marriage. How about a good dinner? Just to show there's no ill feeling, I'll stand the expense!"

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The Dimension of Chance

By CLARK ASHTON SMITH

On the trail of a future Jap spy, a pair of Americans are cast through the stratosphere into a strange atomic world

CHAPTER I

Pursuit into What?

"BETTER get that pea-shooter ready," warned Markley through the audiphone from his seat at the controls of the rocket plane. "At this rate we'll come within range in a few minutes. Those Japs are good gunners, and they'll have a red-hot welcome for us."

Clement Morris, Secret Service operative and college chum of Andrew Markley, his pilot, in a swift and dangerous chase, inspected the cartridge-belt of the new and incredibly rapid-firing machine-gun, behind which he sat in lieu of the official gunner. Then he resumed his watching of the bright metallic speck that they followed in the thin, dark, stirless air of the stratosphere, twelve miles above the eastward-flowing blur that was Nevada.

They were beginning to overhaul the Japanese plane that had picked up the fleeing spy, Isho Sakamoto, near Ogden. Morris had been tracking down this preternaturally clever spy for months, under Government orders. Sakamoto was believed to have procurred plans of many American fortifications, as well as information regarding projected army movements in the war against the Sino-Japanese Federation that had begun a year before, in 1975.

The enemy rocket plane, descending unexpectedly from the isothermal regions, had rescued Sakamoto at the very moment when Morris was about to corner him. Morris had immediately commandeered the services of his old friend Markley of the Air Corps, then stationed at Ogden.

Markley's rocket plane was said to be one of the swiftest in the entire Corps. In its airtight hull, with oxygen-tanks, helmets and parachutes already donned in case of accident, the two men were speeding onward at an acceleration so terrific that it held them in their seats as if with leaden strait-jackets. Morris, however, was little less accustomed to such flights than Markley himself. It was not the first time that they had hunted down some national foe or traitor in company.

They drove on betwen the dark-blue heavens and the dim Earth with its mottlings of mountains and desert. The roar of the rockets was strangely thin in that rarefied air. Before them the light of the stark sun, falling westward, glittered on the wings and hull of the Japanese as if on some great silver beetle. They were many miles from the usual lanes of stratosphere traffic. No other vessels rode the windless gulf through which pursued and pursuer plunged toward the Sierras and the far Pacific.

Less than a mile now intervened betwixt the two vessels. There was no sign of overt hostility from the Japanese, which carried a heavy machine-gun equal in range to that of the American ship and was manned by a professional gunner as well as by Sakamoto and the pilot. Morris began to calculate the range carefully. It would be a fair fight, and he thrilled at the prospect.

The spy, at all costs, must not be permitted to reach San Francisco, where the enemy had established a hard-won base. If the fight should go against them, he or Markley as a

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EDITOR'S NOTE

SOME stories are forgotten almost as soon as they are printed. Others stand the test of time.

Because "The Dimension of Chance," by Clark Ashton Smith, has stood this test, it has been nominated for SCIENTIFICATION'S HALL OF FAME and is reprinted here.

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A headless thing with ropy arms and a puckered, mouth-like orifice tried to drag Morris down.

last resort would summon other planes by radio, from one of the American bases in California, to intercept Sakamoto.

Far off, through the inconceivably clear air on the enormously extended horizon, he could see the faint notching of the Californian mountains. Then, as the planes hurtled on, it seemed to him that a vague, misty blur, such as might appear in sun-dazzled eyes, had suddenly developed in mid-air beyond the Japanese.

The blur baffled him, like an atmospheric blind spot, having neither form nor hue nor delimitable outlines. But it seemed to enlarge rapidly and to blot out the map-like scene beyond in an inexplicable manner.

Markley had also perceived the blur.

"That's funny," he roared through the audiphone. "Anything in the shape of mist or cloud would be altogether impossible at this height. Must be some queer kind of atmospheric phenomenon—the mirage of a remote cloud, perhaps, transferred to the isothermal layer. But I can't make it out."

Morris did not answer. Amazement checked the somewhat inconsequential remark that rose to his lips. At that moment the Japanese rocket plane appeared to enter the mysterious blur, vanishing immediately from vision as if in actual cloud or fog. There was a quick, tremulous gleaming of its hull and wings, as if it had started to fall or had abruptly changed its course—and then it was gone behind the hueless and shapeless veil.

"That's funnier still," commented Markley in a puzzled voice. "But they can't shake us by flying into any mirage or what-you-may-call-it. We'll soon pick them up on the other side."

DIVING horizontally ahead at six hundred miles per hour, the vessel neared the strange blur, which had now blotted out a huge section of the sky and world. It was

like a sort of blindness spreading on the upper air. But it did not convey the idea of darkness or of anything material or tangible.

Both Morris and Markley, as they neared it, felt that they were peering at something virtually beyond the scope of human vision. They seemed to grope for some ungraspable image—an unearthly shadow that fled from sight—a thing that was neither dark nor light nor colored with any known hue.

An instant more and the blur devoured the heavens with terrible momentum. Then, as the plane rushed into it, a blindness fell on the two men. They could no longer discern the vessel's interior or its ports. Ineffable greyness, like an atmosphere of cotton-wool, enveloped them and seemed to intercept all visual images.

The roar of the rockets had ceased at the same time, and they could hear nothing. Markley tried to speak, but the oath of astonishment died unuttered in his throat as if before a barrier of infrangible silence. He might have entered some unfamiliar medium, neither air nor ether, that was wholly void and negative, one which refused to carry the vibrations of light, color and sound.

They had lost the sense of movement, too, and could not tell whether they were flying or falling or were suspended immovably in the weird vacuum. Nothing seemed able to touch or reach them. The very sense of time was gone, and their thoughts crawled sluggishly, with a dull confusion, a dreamy surprise, in the all-including void. It was like the preliminary effect of an anaesthetic—a timeless, bodiless, weightless hovering in the gulf that borders upon oblivion.

Suddenly, like the lifting of a curtain, the blindness cleared away. In a strange, flickering, brownish-red light, the men saw the interior of the hull and beheld each other's goggled helmets and leatheroid air-suits. They became aware that the vessel was falling gently and obliquely, with slanted floor. The rocket explosions had wholly ceased, though Markley had not touched the controlling lever.

He could not start them again. The entire mechanism refused any longer to obey his control. Through the ports, he and Morris saw a multi-colored chaos of outlandish and incomprehensible forms, into which the plane was descending slowly, with incredible lightness, like a downward-floating leaf or feather.

"I don't know what has happened or where we are," said Markley. "But I guess we might as well sit tight. There's no need to jump—we couldn't go down any more safely with parachutes. But what the heck have we gotten into, anyway?"

"Can't say," rejoined his companion, equally dumfounded and at a loss. "Whatever the place is, it's not the state of Nevada."

Their descent toward the unknown, mysterious terrain seemed to occupy many minutes. Once or twice the vessel hung motionless for a moment, then resumed its gliding with a jerk. Staring from the ports in ever-growing bewilderment, they began to distinguish separate forms and masses in the queer chaos of scenery.

Irregular hills, mottled with grey, green, ocher and violet-black, lifted about them in the rufous light, and they perceived that they were settling into a kind of valley-bottom. The ground beneath them was partly bare, partly covered with objects that resembled vegetable growths more than anything else.

These plants or plant-like things, as the plane settled closer above them, displayed a remarkable diversity of shape, size and hue, ranging from leafless, limbless stems to great tree-forms with a crowded foliation that suggested some impossible crossing of araucaria and banana. The whole impression of this flora, even at that first glimpse, was one of lawless variety and illimitable grotesquery.

The vessel slanted slowly down on an open, level tract, narrowly missing the tops of some of the taller growths. It landed with a light jar, little more pronounced than if it had been checked by the usual process of careful deceleration.

Markley and Morris peered out on a scene that amazed them more and more as they began to perceive its innumerable oddities of detail. For the nonce they forgot the Japanese rocket plane they had been following, did not even speculate regarding its fate or whereabouts.

"Jumping Christopher!" cried Markley. "Mother Nature certainly was inventive when she designed this place. Look at those plants—no two of them alike. And the soil would give a geologist the nightmare." He was now peering at the ground about the vessel, which offered a remarkable mosaic of numberless elements—a conglomeration of particolored soils, ores, and mineral forms, wholly unstratified and chaotic.

It was mostly bare and broken into uneven mounds and hummocks, but here and there, in patches of poisonous-looking clay or marl, peculiar grasses grew, with blades that varied in the same manner as the larger growths. One might well have imagined that each blade belonged to a separate genus.

Not far away was a clump of trees, exhibiting monstrous variations in their leafage, even when there was a vague likeness of bole or branch. It seemed as if the laws of type had been disowned—as if each individual plant were a species in itself.

A STREAM of some water-like fluid, varying strangely from peacock blue to cloudy amber in its course, ran past the

fallen plane and meandered through the valley toward a barren slope at one end. From this slope another stream appeared to descend and join it, flowing in a series of rapids and low cascades from a hill-top that melted indistinctly into the reddish-brown heavens.

"Well," observed Markley, after contemplating this milieu with a quizzical and slightly troubled frown, "the problem of how we got here is equaled in its abstruseness only by the problem of how we are going to get away. Somehow or other, we have fallen into a foreign world and are now subject to unfamiliar physical laws. Our nitrone fuel simply won't explode. There's something—the Lord alone knows what—that prevents combustion."

"Sure the tubes are all right?" queried Morris. "Maybe we've run short of fuel."

"*Huh!*" the tone was superbly contemptuous. "I know this boat. There's nothing the matter with the rocket mechanism. And I loaded up to the limit with nitrone before we started. We could have chased Sakamoto to the Great Wall of China and back again if necessary without refueling.

I tell you, we're up against something that was omitted from the text-books. Just look at this ungodly hole, anyway. It's like the scrambled hallucinations of a hundred cases of delirium tremens."

"I've monkeyed with hashish and peyote beans in my time," said Morris, "but I'll admit that I never saw anything like this. However, we're probably missing a lot by staying in the ship. What do you say to a little promenade? Sakamoto and his friends maybe somewhere in the neighborhood. If they are, I'd like to get a line on them."

Very cautiously the two men unstrapped themselves from their seats and arose. In spite of their heavy garments, they felt a queer physical lightness that argued a lesser gravitation than that of Earth. This no doubt accounted for the leisurely fall of the plane. They almost seemed to float about the hull and found great difficulty in controlling and calculating their movements.

They had brought along a few sandwiches and a thermos bottle of coffee. These, their sole provisions, they decided to leave in the plane. Both carried automatic pistols of a new type which fired fifteen shots with terrifically high-powered ammunition having almost the range of rifles.

After making sure that these pistols were ready in the holsters which formed part of their leatheroid garments, and after retesting their oxygen-tanks and helmets, the men opened the sealed door of the hull by means of a spring apparatus.

The air of the valley, as far as they could tell, was still and windless. It seemed to be quite warm, and they were forced to shut off the heating-mechanism in their suits, which they had turned on against the zero of the stratosphere.

Almost vertically overhead a heavy and lopsided sun glared down, pouring out its light like a visible flood of reddish-brown liquid. A few clouds with unearthly forms floated idly about the sun. Far off in the lower heavens, above dim slopes and crags, other clouds went racing by as if driven by a mad tempest.

Trying to determine the course of their descent into the valley, Morris and Markley perceived an aerial blur at one point in the heavens—a blur similar to, perhaps identical with, the one into which they had flown above Nevada.

This blur, it occurred to Markley, was perhaps formed by the meeting or overlapping of two different kinds of space and was the entrance between their own world and the alien dimension into which they had been precipitated. It was visible in the reddish air like the "ropiness" or cloudy nucleus that sometimes appears in a clear wine. And it was completely mystifying.

"Which way shall we go?" queried Markley, as he and Morris surveyed the valley on all sides, perceiving much that they had not seen from the plane. At the end that had been previously hidden, the vari-colored stream emerged from a narrowing defile of madly-tilted cliffs and pinnacles, hued as with petrified rainbows.

On both sides of the valley were long, irregular slopes and barren bluffs, looming vaguely above areas of fantastic forestation. One of these areas, lying on the right hand, approached in a sort of arc to within a hundred yards of the rocket plane, like the bastion of some unearthly fortress.

"I move that we head for the nearest timber," said Morris, indicating this mass of grotesquely varied growths. "I have a feeling, somehow, that I'd like to get under cover as quickly as possible. There's no telling, of course, but I have an intuition that Sakamoto and his compatriots are somewhere in the vicinity."

"Their visibility is pretty poor if they are," commented Markley. "We may have lost them altogether—maybe they got safely through that atmospheric blind spot, or fell into a more remote section of this ungodly world."

"Well, I'm not taking any more chances than I have to. I don't care for the idea of a soft-nosed Japanese bullet in the small of my back."

"If rocket fuel won't explode in this world, there's no certainty that cartridges will either," Markley pointed out. "But, anyway, we might just as well take a look at the woods over there."

CHAPTER II

The World of Chance

THEY started off toward the forest, trying to control the absurd lightness that sent them bounding for twenty feet or more. After a few paces, however, they found that their weight was increasing rapidly, as if they had entered a zone of stronger gravitation.

They took one or two steps that were almost normal—and then floated off in ludicrous leaps of a dozen yards that were checked suddenly as if by another belt of increased gravity.

The trees, which had seemed so near, retreated in a strange and disconcerting fashion. At length, after many minutes of variable progression, the men saw the wood looming immediately before them and could study its details.

High in the heavens, above all the other growths, there towered two incredibly elongated boles such as might be seen in the delirium of hashish. About them a medley of lesser forms, no two of which displayed the same habit, leaned and crawled and squatted or massed themselves in monstrous tangles.

There were single plants that combined enormous moon-shaped leaves with others that were fern-like or lanceolate. Gourd-like fruits grew on the same tree with others in the forms of tiny plums and huge melons. Everywhere there were flowers that made the most ornate terrestrial orchids appear simple and rudimentary as daisies in comparison.

All was irregular and freakish, testifying to a haphazard law of development. It seemed that this whole chaotic cosmos in which the men found themselves had been shaped from atoms and electrons that had formed no fixed patterns of behavior, whose one controlling law was chance.

Nothing, apparently, was duplicated. The very stones and minerals were anomalous. What further irregularities they would encounter Morris and Markley could not guess. In a world subject to chance everything would be incalculable. The action of the simplest natural laws would be wholly erratic and independable. A horror of this lawless world gradually arose in them.

So far, they had met no form of animal life. Now, as they neared the forest, a creature that was like a poddy and spider-legged serpent came down as if from the heavens on one of the preposterously tall boles, running swiftly. The men stepped toward the tree, trying to decide which end of this curious creature was the head and which the tail.

Like a mirage the forest faded away with their change of position. They saw its fantastic tops at a seeming distance of many hundred yards, in an oblique direction. Turning, they found that the whole valley, during their brief journey, had shifted about and had recomposed itself beyond all recognition.

They were unable to locate the rocket plane for some moments—but finally, in an opposite quarter and seemingly much further away than they had supposed, they discerned the gleam of its wings and hull.

Before them, in lieu of the forest, was an open space in which the vari-colored stream had mysteriously reappeared. Beyond the stream arose plots of scattered vegetation, backed by opalescent cliffs.

"The late Professor Einstein would have been interested in this," remarked Morris. "Even the light must be moving at random, and sight images are traveling in zig-zags and circles. Nothing is where it ought to be. We've gotten into a labyrinth of mirages."

"We'll be lucky if we ever find our way back to the old boat," snorted Markley. "Want to look any further for our Japanese friends?"

Morris did not answer at once. His eye had caught a silvery glint, close to one of the far-off plots of vegetation beyond the stream. He pointed it out to his companion silently. Three dark, moving specks, doubtless the figures of men, appeared beside the glint as they watched.

"There they are," said Morris. "Looks as if they were starting for a pasear themselves or were just returning from one. Shall we try to interview them?"

"You're the captain, old scout. I'm game if you are. Lead on, MacDuff."

Temporarily forgetting the highly illusive refraction of the weird scenery, they started toward the stream, which appeared to be only a few paces away and which they could easily cross at a step if the light gravity prevailed in its neighborhood.

By another astonishing shift the stream moved away from them, reappearing in a different quarter at a considerable distance—and the gleam of the Japanese rocket plane and its attendant human specks had vanished from view.

"I guess we'll play tag with some more mirages," opined Markley in a disgusted tone. "Even if guns will shoot in this crazy world, there's small likelihood that we could hit anyone or that anyone could hit us."

More deeply bewildered than ever, they pressed forward, trying to relocate the enemy vessel. The changing zones of gravity made

their progress erratic and uncertain. The landscape melted and shifted around them like the imagery of a kaleidoscope.

A clump of crowded vegetation, rearing its anomalous boles and monstrous leafage as if from nowhere, leaped into place before them. Rounding the clump, which seemed relatively stable, they came suddenly in sight of the Japanese, who, in air-suits and helmets, were now standing on the opposite brink of the apparently nearby water.

WHETHER or not Sakamoto and his fellows had seen the Americans was uncertain. They were staring in the direction of Morris and Markley, who did not wait for decisive proof that the enemy had perceived them, but drew their automatics and aimed quickly, each choosing one of the two nearest figures.

Somewhat to their surprise in view of the various baffling and topsy-turvy phenomena they had encountered, the pressure of the triggers was followed by a sharp double report. The Japanese, however, did not seem to realize that they were being fired at. Their apparent nearness and relative position were no doubt illusory.

Markley and Morris, recognizing this probability did not shoot again, but sprang forward in an effort to approach the deceptive figures. The Japanese vanished. The whole valley seemed to swirl in a semi-circle and rearrange itself. The two Americans found themselves at the foot of that barren slope from which, in their first remote view of the place, a second stream had appeared to descend and join the meandering creek.

From their new and close vantage, however, there was only one stream, which, flowing down the valley-bottom against the barring slope, ran turbulently uphill in a series of skyward-leaping rapids and cascades!

Too astonished even for profanity, they stared without comment at this unique reversal of what they were accustomed to regard as natural law. For a considerable distance on either side of the stream the acclivity was hollowed and worn smooth as if by landslides or a process of slow attrition.

Occasionally, as the men stood watching it, a pebble, a lump of conglomerate soil, or a few particles of grit were loosened from the ground, to roll heavenward rapidly and disappear beyond the ragged crest of the slide together with the cascading waters.

Drawn by thoughtless curiosity and wonder, Morris stepped toward the beginning of the slope, which was perhaps ten feet away. It was like stepping over a precipice. The ground seemed to tilt beneath him, and the slope fell like an overturning world, till it pitched downward at a steep angle with the sky at its bottom.

Unable to arrest his strange fall, he slid sidelong into the rushing water and was carried roughly and dizzily down the rapids and over the cascades. Half-dazed and breathless, he felt that he was shooting across the world's rim toward a nether gulf in which hung the fallen sun.

Markley, seeing his companion's weird fate, also started toward the acclivity with some dim instinctive idea of rescuing Morris from the inverted stream. A single step, and he too was seized by the skyward gravitation. Slipping, rolling and bumping as if in a steep chute, unable to regain his foothold, he slid along the topsy-turvy slope, followed by a shower of detritus, but without falling into the water.

He and Morris, passing the rim of the slide as if hurled toward the reddish-brown sky that was now beneath them, each experienced another bewildering bouleversement. Morris found himself floundering in a sort of hilltop pool, where the final cascade foamed itself into quiescence. Markley, stunned and sprawling, but with unbroken bones, was lying on a pile of rubble such as would ordinarily gather at the bottom of an escarpment.

Morris scrambled from the pool, which was only waist-deep, and helped Markley to his feet. The local gravity was almost normal from a terrene viewpoint. Plainly all objects that were drawn skyward along the deficiently attractive area were promptly arrested when they reached the top. Headlong and turbulent, the cascade curved over the rim into the level pool.

The earth-men, finding themselves quite unhurt, proceeded to examine their air-suits and helmets for possible damage. Since the local atmopshere was untested, and might well possess deleterious properties, a rift in the leatheroid fabric would perhaps be a serious matter. The suits, however, were intact, and the tubes that supplied oxygen from flat tanks behind the shoulders were in perfect condition.

The height that they had climbed in so singular a fashion was really part of an uneven plateau that appeared to surround the whole valley. The plateau was divided by long hummocks of mottled soil and stone which rose gradually into bleak uplands and low mountains at a seeming distance of several miles.

From their present vantage point, the valley below was an immense sink. They saw the entire course of the tortuous stream, the areas of *outré* vegetation, and the gleaming of some metallic object which they assumed to be their own rocket plane. The Japanese plane was not visible, and was perhaps hidden by one of the plots of forestation.

Of course, remembering the optical dis-

tortion and displacement which they had encountered so often in their wanderings, they could not be sure of the actual distance, perspective and relationship of the various elements in this bizarre scenery.

TURNING again from the valley, they considered the plateau itself. Here the stream, running in a normal and tranquil fashion, entered a ravine and disappeared. The whole landscape was intolerably dreary and repellent, with the same chaotic mineral formation as the valley, but without even the valley's anomalous plant-life to relieve its deadly desolation.

The lopsided sun, declining very swiftly or else subject to the nearly universal optic transposition, had already fallen halfway from its zenith toward the horizon of amorphous mountains in what the men estimated to be less than an hour. The clouds had all melted away, but far off, above the valley, they could still discern the mysterious aerial blurred spot.

"I guess we'd better mosey back toward the boat," said Markley, after viewing the barren scene with obvious horror. "But we won't try to go the way we came. If we follow the rim of the valley, we ought to find a place where the gravitation won't drag us the wrong way."

Made doubly cautious by their disconcerting experiences, they started along the verge of the sink. For some distance, the ground was littered with detritus, and even with loose boulders that had rolled upward to be arrested at the top. When they came to the end of this rubble, they surmised that they were beyond the belt of reverse gravitation.

Following the rim toward a point where the slope became more gradual, they came suddenly into a zone of heavier gravity than any they had yet entered. At one step their weight appeared to treble. A crushing burden descended upon them, and they could lift their feet only with immense effort.

Struggling against the uncanny pull of the strange earth and on the verge of panic they heard an indescribable clattering and rustling behind them, and turned their heads laboriously to ascertain the cause.

Emerging as if from empty air, a concourse of unimaginably monstrous beings had gathered at their very heels on the bleak verge of the plateau. There were scores of hundreds of these entities, who, whether mere beasts or the analogues of humanity, were no less various and freakish in their conformation than the weird flora of the valley-bottom.

Obviously there was no common norm or type of development as in terrestrial species. Some of the entities were no less than twelve or thirteen feet tall. Others were squat pygmies. Limbs, bodies and sense-organs were equally diversified and equally of nightmare quality.

One creature was like a prodigious moonfish mounted on stilts. Another was a legless, rolling globe fringed about the equator with prehensile ropes that served to haul it along by attaching themselves to projections. Still another resembled a wingless bird with a great falcon beak and a tapering serpentine body with lizard legs, that glided half-erect.

Some of the creatures possessed double or triple bodies. And some were hydra-headed or equipped with an excessive number of limbs, eyes, mouths, ears and other anatomical features.

Truly these beings were the spawn of chance, the random creations of a lawless biological force. A horde of fabulous, fantastic, nightmare improbabilities, they surged forward upon Morris and Markley, uttering a babel of wordless sounds, of cacklings, hisses, clucks, ululations, roarings and bellowings. Whether they were hostile or merely curious the men could not decide. Both were petrified with a horror beyond the horror of evil dreams. Not one of the creatures emitted a comprehensible sound.

The leaden gravitational drag, rendering the least movement slow and toilsome, reenforced their sensation of nightmare. Laboriously they drew their pistols and, half-lifting them at the oncoming rout, pulled the triggers. The reports were dull and muffled. The bullets flew with visible slowness and rebounded harmlessly like tossed pebbles from the monsters that they struck. But their slow-motion qualities were not matched by the monsters at which they aimed.

Like a stampeding herd, the throng of biologic horrors was upon Morris and Markley. Battling against the gravity as well as against the loathsome bodies and members that engulfed them, they were borne irresistably along by the seething mass. Their pistols were torn from their hands, leaving them unarmed and helpless.

They saw hideous faces and faceless things that milled about them like a torrent of the damned in some nether circle. Occasionally, in broken glimpses, they saw a disordered landscape of amorphous rock with pools and streams of fine sand and sudden, fortuitous vegetation like mad mirages, through which they were being carried.

The origin of the monsters, their purpose, their destination, their intentions in regard to the earthmen, were enigmatic as the riddles of delirium. Resistance was futile. Morris and Markley gave themselves up to the rushing motion of the throng in the hope that some opportunity of escape would ultimately offer itself.

CHAPTER III

The Masters of Chance

THEY seemed to go on for hours. The gravitation still varied, but was often constant over large areas. The sun, instead of sinking further, rose again to the zenith. Sometimes there were brief intervals of darkness, as if the light had been shut off by some queer fluctuation of atmospheric properties.

Puffs of wild wind arose and died. Rocks and whole hummocks seemed to crumble abruptly on the waste. But through all this chaos of conditions, the monstrous horde poured onward with its captives.

Apparently the earthmen had fallen in with a whole tribe of these anomalous creatures, who were perhaps migrating from one zone of their random world to another. At least, such was the explanation that suggested itself in lieu of positive knowledge.

Markley and Morris became aware that the ground was slanting downward. Over the heads of the monsters, they saw that they had entered a flat, sloping valley. Rough mountains, perhaps the same that they had seen from the rim of the sink, appeared to loom at no great distance above them.

The low valley debouched in a shallow, craterlike hollow. Here the horde suddenly arrested it onward rush and began to spread out in a curious manner. Markley and Morris, now able to work their way forward, saw that the creatures had arranged themselves in a ring about the slopes of the circular hollow, leaving a clear space at its bottom.

In the center of the vacant space a singular phenomenon was manifesting itself. A fountain of fine, hueless powder rose from the stone and soil, attaining a height of three feet. Slowly it widened and rose higher, preserving the form of a round column.

Its top mushroomed into a vague cloud, spreading above the heads of the assembled throng and floating skyward. It was as if some process of molecular dissolution were taking place to create this formation.

Markley and Morris were fascinated by the spectacle. Before them, the silent, circular crumbling of the ground went on. The column swelled to Titanic proportions, towering above the crater. Seemingly the monsters too were fascinated, for none of them stirred to break the ring-like formation.

Then, gradually, as the column of atoms increased, the horde began to surge forward. The ring narrowed till its inmost ranks were driven, close-packed, into the fountain by the pressure from behind. Visibly, as the creatures entered it, their limbs and bodies melted like bursting puff-balls, to swell the columnar cloud of dissolution that mounted skyward.

"Are they all going to commit suicide and take us with them?" Markley's voice was a horror-tautened whisper. He and Morris, caught in the forward ranks, were being forced slowly toward the fountain. Only two rows of the monsters now intervened, and even as Markley spoke, the bodies of the inmost row began to dissolve in the column.

The earthmen struggled desperately against the massed bodies that crowded from behind. But the living wall, close and implacable, as if bent on nothing but self-immolation, drove downward inch by inch.

Overhead, the sun was blinded by the mushrooming column. The sky took on a madder-brown twilight. Then, with a suddenness as of some atmospheric legerdemain, the twilight blackened into Cimmerian darkness.

A mad, elemental howling tore the air, a blind hurricane filled the crater, blowing as if from above. Bolts of lightning leapt upward from the ground, enshrouding with blue and violet fire the horrible horde of biologic anomalies.

The pressure behind the earthmen relaxed. A panic seemed to have seized the monsters, who were now dispersing in the bolt-riven darkness. The earthmen, fighting their way upward, stumbled over the half-charred bodies of those who had been slain by the lightning.

By intermittent flashes, they saw on looking back that the column of atomic dissolution still poured from the crater's bottom to merge with the seething storm that had risen as if at random from nowhere.

Miraculously untouched by the lightning, Morris and Markley found themselves in the flat valley through which they had entered the crater. Most of the monsters had now disappeared, melting away like the shadows of a nightmare. The last flashes revealed little but vacant soil and rock.

The lightning ceased, leaving the men in darkness. An irresistable wind, like a torrent of rushing water, bore them along through the Stygian night and they lost all trace of each other. Often hurled headlong, or lifted bodily from the ground at the mercy of lawless, anarchic elements, they were blown apart like lost leaves.

Abruptly as it had begun, the tumult fell in a great stillness. The darkness dissolved from the heavens. Morris, lying dazed and breathless, found himself alone amid barren reaches of rock and sand.

He could trace nothing familiar in the landscape. The mountains were lost to view, and he saw no sign of the fountain of molecules. It was as if he had ben transported to another tract of this fantastic realm of chance.

Halloing loudly, but answered only by sardonic echoes, he started off at random in an effort to find Markley. Once or twice, amid the shifting, illusive imageries through which he wandered, he thought that he saw the mountains which had loomed beyond the crater of dissolution.

THE sun, changing its apparent position by leaps and bounds, was now close to the horizon and its rays were indescribably dark and eerie. Morris, plodding doggedly on amid the delusive advances and recessions of the dreary landscape, came without warning to a flat area that was somehow familiar. Before him the lost mountains reappeared as if by magic. Going on, he emerged in the crater-like hollow.

Many of the charred monsters, slain by the electric storm were strewn about the slopes. But the fountain itself was no longer active. A round, funnel-like pit, twenty feet in diameter, yawned dark and silent at the bottom of the hollow.

Morris felt the descent of an overmastering despair. Lost as he was in this awful transdimensional limbo, and separated from his comrade, whose fate he could not imagine, the prospect was indeed dreary and hopeless. His whole body ached with accumulated fatigue; his mouth and throat were afire with corrosive thirst.

Though the oxygen still poured freely from its tank, he could not tell how much of his supply remained. A few hours, at most, and then his ordeals might end in asphyxiation. Momentarily crushed by the horror of it all, he sat down on the crater slope in the rusty-brown gloom.

Curiously, the twilight did not darken. As if in a reversed ecliptic, the sun returned slowly into the heavens. But Morris in his despair, hardly heeded this *outré* phenomenon.

Staring dully at the re-illumined ground, he saw the appearance of several grotesque, anomalous shadows that fell past him on the slope. Startled from his lethargy, he sprang up. A dozen or more of the monstrous people had returned. Some of them were gnawing the cindery bodies of their companions. But three, as if disdaining such fare, were closing in upon Morris.

Even as he turned, they assailed him. One of them, a headless thing with ropy arms and a puckered, mouth-like orifice in the center of its gourd-shaped body, tried to drag him down with its frightfully elongated members.

Another, which might have been some heraldic griffin minus wings and feathers, began to peck at his air-suit with its tremendous horny beak. The third, which was more like a horribly overgrown toad than anything else, hopped about him on the ground and mumbled his ankles with its toothless mouth.

Sick with nausea, Morris struggled against them. Time and again he kicked away the toad-like creature, which returned with noisome pertinacity. He could not loosen the ropy members of the headless horror, which had wrapped themselves about him in plastic folds.

But his worst fear was that the griffin would tear open his leatheroid garments with its slicing beak. He hammered the huge bird-shaped body with his fists, driving it away repeatedly. But as if mad with rage or hunger, it reassailed him. His legs and body were sore in a dozen places from the blows of the cruel beak.

Beyond his attackers he caught involuntary glimpses of the horrid feast that was being enjoyed by their fellows. It was like the feeding of harpies in some infernal circle, and Morris could surmise his own imminent fate all too clearly. He saw that several of the feeders, quitting their half-eaten provender, were turning in his direction as if to join the three assailants.

Instinctively, as he fought on, he heard the sound of a measured drumming from above. The sound drew nearer and ceased. In a turn of the dying combat, he saw that two gigantic beings had arrived among the monsters, and were standing a little apart, as if watching the gruesome orgy with detached interest.

Even amid the frightful preoccupation of his struggles he noticed a strange thing. The new arrivals, alone of all the life-forms that he and Markley had met in this erratic world, seemed to approximate a common type of physical development.

Both of them stood erect, and their conformation was vaguely human in its outlines, except for the enormous wings, ribbed and leathery as those of ancient pterodactyls, which hung half-folded at their backs. Their coloration was a dark, bituminous brown, verging upon ebon blackness in the wings, and lightened somewhat in their heads and faces.

They were massively built with a stature of eleven or twelve feet and aquiline, sloping, hairless heads that denoted a large brain-capacity. No trace of ears could be detected, but two round, luminous, golden-yellow eyes were set far apart in their faces above sphinx-like mouths and nostrils. Somehow they made Morris think of Satanic angels,

but their aspect was not malign and was wholly poised, aloof and dispassionate.

Such were the impressions that he received, without conscious assortment or definition at the time. Without interlude, the atrocious battle with the three monsters continued. Presently, however, one of the gigantic winged beings moved with prodigious strides toward the earthman and his attackers as if to watch the uneven combat. Morris felt the regard of the great yellow eyes, which, inscrutable themselves, appeared to search him through and read the inmost secrets of his mind.

CHAPTER IV

Atomic Dust

THE being stepped closer, lifting an enormous hand in a leisurely but imperious gesture. As if fearful or cognizant of a superior power, the loathsome assailants abandoned their efforts to drag Morris down, and slunk away to assuage their hunger on an unpreempted bit of carrion that lay beside the pit in the crater's bottom.

A dreadful faintness surged upon the earthman—a reaction from all the intolerable horrors and fatigues of the day. Amid the whirling darkness into which he slid, he saw the gleaming of two mesmeric goldern eyes, and felt the firm grasp of giant hands that seemed to support and lift him.

An electric shock ran through him at their touch. Miraculously his faintness cleared away, leaving him wonderfully alert. Strength seemed to flow into him from the mighty hands—magnetic strength, buoyant and preterhuman. The horror faded from his shaken nerves. He was no longer lost and bewildered, but was filled with a mystic confidence.

The experience that he next underwent was perhaps the strangest of all that befell him in the dimension of chance. Also, it was the hardest to remember or describe.

Beneath the thrilling touch of the winged being whose hands held him firmly by the shoulders, he seemed almost to pass beyond his own consciousness. Thoughts that were not his own rose up and limned themselves with the clearness of actual visions of objective impressions.

In some ineffable way, he shared for a moment the thoughts and memories of the being who had rescued him from the monsters. Whether or not an intentional telepathy was being exerted, he never quite knew. But alien vistas, beheld through unfamiliar senses, appeared to open before him.

The two winged beings, he knew, were members of a race that was far from numerous. They were the rulers of this outlandish world, the self-made masters of its incalculable forces and disorganized elements. Their evolution had been supremely difficult and painful. Through their own volition, they had risen from a state that was little higher than that of the unhappy monsters.

They had developed faculties that enabled them to circumvent the lawlessness of their environment, to forecast its very randomness, to impose law and order on the ever-changing chaos. They had even learned to control their own development.

The nightmare hollow in which Morris stood had temporarily vanished. There came to him the sense of tremendous flight above strange horizons. He seemed to pass on lofty wings over wastes of choatically piled and tumbled rocks with the being whom he knew as one of the Masters of Chance.

Amid the shifting mirages of desolation, through distorting zones of air, above realms that pitched obliquely for immeasurable leagues, like the flattened side of some malformed planet, he flew unerringly to his destination.

Beyond the chaos, on tiered mountains that rose stupendously high, he beheld the high and many-terraced citadels of the Masters. As if he had trodden their battlements, he knew the white walls of a majestically ordered architecture that defied the erratic formlessness of the world beneath and imposed its harmonic sternness on the tumbled waste.

He knew the terraces, lined with geometric rows of trees and flowers, in which, by some miracle of horticultural mastery, the random flora had been subdued and had taken on the characters of type and species.

Dimly, to the limit of his human thought-capacity, he understood something of the Masters. Their powers were those of dynamic will, of magnetism and sense-development—and they did not depend entirely on mere physical science or machinery.

In former ages they had been more numerous, had ruled a larger area of that unstable, incalculably treacherous world. It seemed that the apex of their evolution had passed, that though they still were powerful, they were menaced more and more by the beleaguering forces of cosmic anarchy.

Such were the things that Morris learned in that moment of communion with his rescuer. Returning to his own proper consciousness, he felt also that the telepathic interchange had been mutual: the being had read his own history, his predicament of hopeless alienation in a strange world—and in some

inscrutably benign way, was minded to help him.

He felt no surprise, whatever, at the more *outré* happenings that ensued. Somehow, as if he shared the ability of his protector to read the future, all that occurred was familiar as a twice-told tale. In this bizarre but foreknown drama, the winged being lifted him gently but firmly, making a cradle of its vast arms, and spreading its ebon wings, mounted swiftly toward the misshapen sun.

Its companion followed, and Morris knew, as they flew steadily above the changing zones of gravitation, above the dreary jumble of the wandering mirages, that they were seeking Markley.

In a dim, partial way he seemed to share the clairvoyance of the Masters, which enabled them to distinguish the real from the illusory amid the disordered refraction of their atmosphere. He, too, was gifted with a televisual faculty by which he could scan the remote or hidden portions of the waste.

SURE and undeviating, the mighty leathern wings beat onward toward their goal. Amid the kaleidoscopes of desolation there appeared the rough rim of the valley in which Morris and Markley had left their rocket plane.

Swifter grew the beating of the wings, louder was their drumming, as if haste were needed. A strange anxiety mounted in Morris lest they should be too late.

Now they hovered above the valley, slanting groundward. The place had changed in some fashion that Morris could not define to himself at a moment. Then he realized that certain of the ringing bluffs and slopes had crumbled away, were still crumbling, to form a moving sea of hueless sand.

In places, columns of atomic powder mounted like geysers; some of the area of forestation had fallen into shapeless heaps of dust, like disintegrated fungi. These sudden, erratic, localized decompositions of matter were common phenomena of the world of chance. It came to Morris, as part of his mystic knowledge, that the order which the Masters had wrested from chaos was not wholly secure against their inroads.

Anxiously, with a breathless fear, he scanned the area into which the mighty being who carried him was descending on sloped wings. Markley was somewhere in that area. He had wandered back there in a blind, bewildered search for his lost companion, and danger—a double danger—threatened him now.

As if with the keen, straight-seeing eyes of the Master Morris discerned a rocket plane on the valley floor and knew it to be the one the Japanese had used. Seemingly it was deserted and the moving tide of sand from the crumbling cliffs engulfed it even as he watched.

In the middle of the valley, he described the glittering of another plane—the one that belonged to Markley. Four tiny figures were milling to and fro beside it in wild combat. Upon them, unheeded, the deluge of dissolution was advancing swiftly. The sands rolled in crested billows.

The trees swelled and soared to monstrous arboreal phantoms and dissolved in pulverous clouds. Pillars of freed molecules built themselves up from the valley-bottom and were shaped into ominous, floating domes that obscured the sun.

It was a scene of elemental terror and silent tumult. Across it, sloping and dipping, the wings of the Masters drummed, till they hovered above the knot of struggling figures.

Three men in helmets and air-suits were attacking a fourth, who was similarly attired. The weakness of the local gravity, however, made the combat less unequal than it might have seemed. Also, it served to lighten the blows which the contestants succeeded in delivering.

Markley, in great, twenty-foot leaps, was eluding the Japanese much of the time; but plainly he was tiring; and the three would corner him soon. Several automatic pistols, discarded as if empty or useless, were lying on the ground; but one of the Japanese had drawn an ugly, curved knife and was watching his chance for a thrust at the darting figure of Markley.

In their desperate struggle none of the four had perceived the arrival of the Masters. It was Markley who saw them first. As if stupefied, he paused in one of his rushes, and stared at Morris and the winged beings.

Two of the Japanese turned and also beheld the hovering figures. They stood petrified with astonishment or terror. But the third, intent on delivering a thrust with his wicked knife, had not seen them; and he flew in a long and vicious aerial leap at Markley.

The second Master, hanging in air beside Morris' protector, raised his right hand and pointed at the flying Japanese. For an instant, his fingers seemed to clutch and hurl a great javelin of living fire. The javelin leapt and faded—and the Japanese, a shapeless pile of fuming cinders, lay at Markley's feet.

The other two, shielding their goggled eyes with their hands, as if the terrible lance of light had blinded them, rushed toward the oncoming storm of atomic disintegration. Before them, on the valley floor, a sudden pillar of dust ascended, swelling awfully as it ate the conglomerate soil. It seemed to topple upon them and then, suddenly, they were gone.

MORRIS, watching in wordless awe, felt that the lifting arms had been withdrawn, that his feet had been set on the ground. Close above him, the two Masters towered, with spread wings. As if an urgent voice had spoken aloud, he knew the things that must be done without delay.

"Come—we can start the plane!" he cried to Markley. "We've got to move in a great hurry."

Markley, who had been staring at the Masters, appeared to emerge from a sort of trance.

"All right, if you say so—and if the fuel will explode," he agreed. "But before we go, I'd like to thank your winged friend for browning Sakamoto. I don't know how it was done; but he sure has a wicked jolt. That Jap would have laid me open like a dead fish in another split-second."

A sudden, howling wind blew down the valley, spreading the dust-billows like a blown spray, lifting the atomic columns into a roof of doom. Swiftly the storm of dissolution gathered, rushing toward the plane.

Markley, followed by Morris, sprang for the open manhole. While Morris swung the heavy lid into place, his companion leapt to the control-board. As if by some miracle of chance or some change in the unknown, interfering force, his pressure of the starting-lever was answered by the loud roar of discharging rockets. The plane lifted, acquiring momentum till it soared above the seething valley.

Looking back through one of the ports, Morris perceived the two flying colossi, who hung aloof in the heavens as if watching the departure of the plane. Serene, impassive, on poised wings, they floated beyond the atomic storm, which had already begun to subside.

He turned away with a strange awe, a reverential gratitude. Beneath Markley's skilful guidance, the plane was heading straight for the formless atmospheric blur that still blotted the reddish-brown sky.

Again Morris looked back. High, far and tiny, between the malformed sun and the chaotically strewn and riven world, the mysterious beings whom he knew as the Masters of Chance flew steadily on level wings toward their remote city. It was his last sight of them, and already the mystic knowledge that had been imparted to him was fading a little in his brain.

The telepathic vision of the citadels that imposed their severe architectural ordination on a mad terrain—the supernal, hard-won power of the Masters, battling perpetually against lawless elements and the treacherous, intractable forces of a cosmic Pandemonium—all had become slightly unreal, like a dreamland from which the dreamer is departing.

Now the blind aerial blur had enveloped the vessel. Greyness, clinging and all-pervasive, filled it like an atmosphere of cotton-wool. Sight, sound—even feeling and thought—were lost as if in some hinterland of oblivion.

Out of the blur, as if from a formless, hueless, dream of death between two lives, the plane and its occupants floated into the dark azure of the terrene stratosphere. Sight, consciousness, feeling, memory, rturned in a sudden flood to Morris and Markley. Below them again, they saw in mottled relied the familiar reaches of Nevada, edged with white and saw-like mountains.

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THE MAN WITH X-RAY EYES

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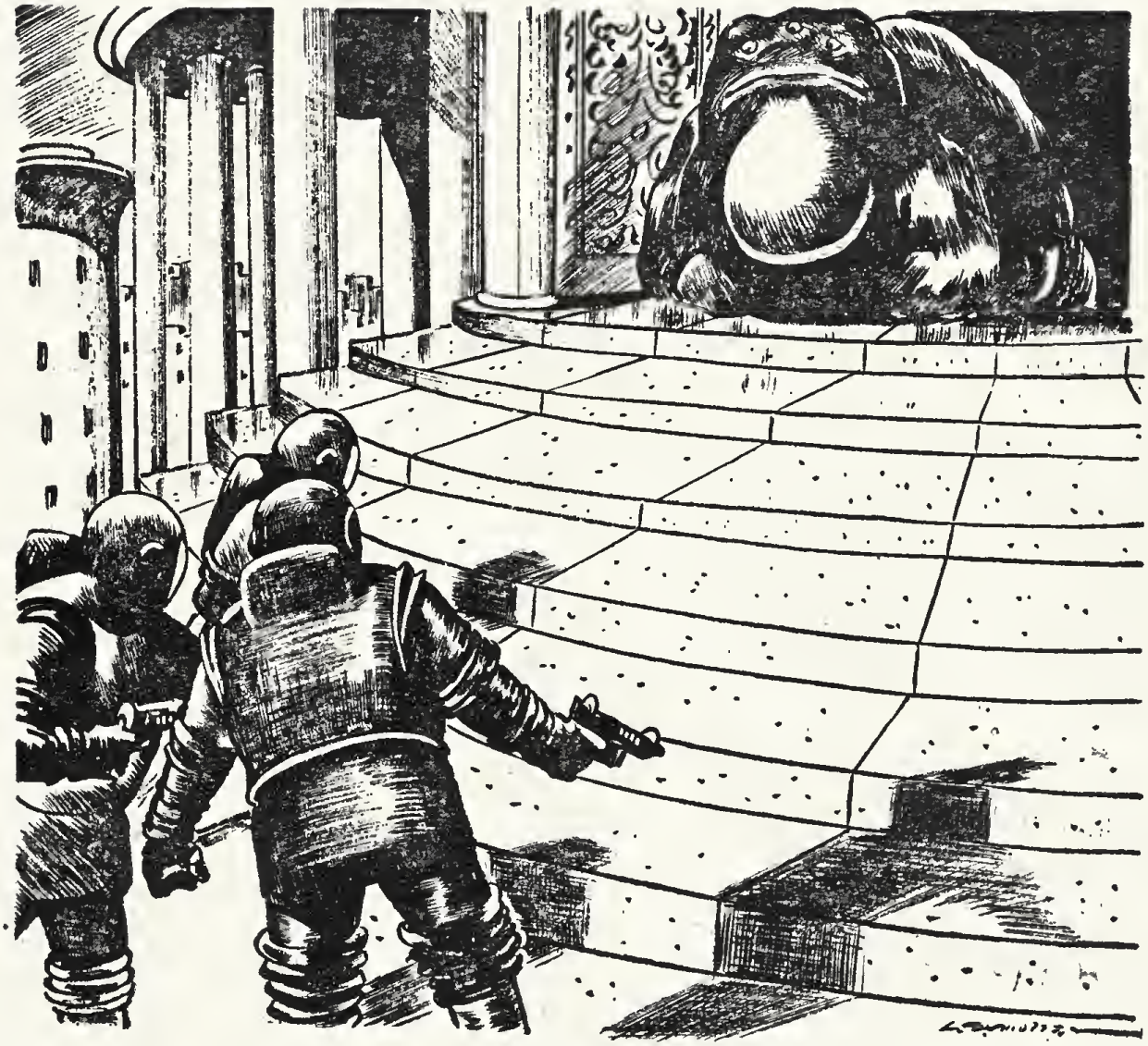

"That never came from any part of our own galaxy!" Dril cried

THE DEAD PLANET

By EDMOND HAMILTON

Star travelers from a distant galaxy crash on a lost world to confront horror and wonder—and a shocking surprise!

IT DIDN'T look like such a forbidding little world at first. It looked dark, icy and lifeless, but there was no hint of what brooded there. The only question in our minds then was whether we would die when our crippled ship crashed on it.

Tharn was at the controls. All three of us had put on our pressure suits in the hope that they might save us if the crash was bad. In the massive metal suits we looked like three queer, fat robots, like three metal globes with jointed mechanical arms and legs.

"If it hadn't happened here!" came Dril's hopeless voice through the inter-com. "Here in the most desolate and unknown part of the whole galaxy!"

"We're lucky we were within reaching distance of a star system when the generators let go, I murmured.

"Lucky, Oroc?" repeated Dril bitterly. "Lucky, to postpone our end by a few days of agony? It's all we can look forward to on *that.*"

The system ahead did look discouraging for wrecked star explorers. Here in a thin region at the very edge of the galaxy, it centered around a sun that was somber dark red, ancient, dying.

Six worlds circled that smoldering star. We were dropping toward the innermost of the six planets, as the most possibly habitable. But now, we could clearly see that life could not exist on it. It was an airless sphere, sheathed in eternal snow and ice.

The other five planets were even more hopeless. And we could not change course now, anyway. It was a question of whether the two strained generators that still functioned would be able to furnish enough power to slow down our landing speed and save us from total destruction.

Death was close, and we knew it, yet we remained unshaken. Not that we were heroes. But we belonged to the Star Service, and while the Star Service yields glory, its members always have the shadow of death over them and so grow accustomed to it.

Many in the Star Service had died in the vast, endless task of mapping the galaxy. Of the little exploring ships that went out like ours to chart the farther reaches of stars, only two-thirds or less ever came back. Accidents accounted for the rest—accidents like the blowing of our generators from overload in attempting to claw our way quickly out of a mass of interstellar debris.

Tharn's voice came to us calmly.

"We'll soon hit it. I'll try to crabtail in, but the chances are poor. Better strap in."

Using the metal arms of our suits clumsily, we hooked into the resilient harnesses that might give us a chance of survival.

Dril peered at the largening white globe below.

"There look to be deep snows at places. It would be a little softer there."

"Yes," Tharn replied quietly. "But our ship would remain buried in the snow. On the ice, even if wrecked it could be seen. When another ship comes, they'll find us, and our charts won't be lost."

Well, for a moment that made me so proud of the Star Service that I was almost contemptuous of the danger rushing upon us.

It is that wonderful spirit that has made the Service what it is, that has enabled our race to push out from our little world to the farthest parts of the galaxy. Individual explorers might die, but the Service's conquest of the universe would go on.

"Here we go," muttered Dril, still peering downward.

The icy white face of the desolate world was rushing up at us with nightmare speed. I waited tensely for Tharn to act.

He delayed until the last moment. Then he moved the power bar, and the two remaining generators came on with a roar of power.

They could not stand that overload for more than a few moments before they too blew out. But it was enough for Tharn to swing the falling ship around and use the blast of propulsive vibrations as a brake.

Making a crabtail landing is more a matter of luck than skill. The mind isn't capable of estimating the infinitesimal differences that mean disaster or survival. Use a shade too much power, and you're bounced away from your goal. A shade too little, and you smash to bits.

Tharn was lucky. Or maybe it wasn't luck as much as pilot's instinct. Anyway, it was all over in a moment. The ship fell, the generators screamed, there was a bumping crash, then silence.

The ship lay on its side on the ice. Its stern had crumpled and split open at one place, and its air had puffed out, though in our suits we didn't mind that. Also the last two generators had blown out, as expected, from the overload in cushioning our fall.

"We made it!" Dril bounded from despair to hope. "I never thought we had a real chance. Tharn, you're the ace of all pilots."

But Tharn himself seemed to suffer reaction from tension. He unstrapped like ourselves and stood, a bulky figure in his globular suit, looking out through the quartz portholes.

"We've saved our necks for the time being," he muttered. "But we're in a bad fix."

The truth of that sank in as we looked out with him. This little planet out on the edge of the galaxy was one of the most desolate I had ever seen. There was nothing but ice and darkness and cold.

THE ice stretched in all directions, a rolling white plain. There was no air—the deep snows we had seen were frozen air, no doubt. Over the gelid plain brooded a dark sky, two-thirds of which was black emptiness. Across the lower third glittered the great drift of the galaxy stars, of which this system was a borderland outpost.

"Our generators are shot, and we haven't enough powerloy to wind new coils for *all* of them," Tharn pointed out. "We can't call a tenth the distance home with our little communicator. And our air will eventually run out."

"Our only chance," he continued decisively, "is to find on this planet enough tantalum and terbium and the other metals we need, to make powerloy and wind new coils. Dril,

get out the radio sonde."

The radio sonde was the instrument used in our star mapping to explore the metallic resources of unknown planets. It worked by projecting broad beams of vibrations that could be tuned to reflect from any desired elements, the ingenious device detecting and computing position thus.

Dril got out the compact instrument and tuned its frequencies to the half dozen rare metals we needed. Then we waited while he swung the projector tubes along their quadrants, closely watching the indicators.

"This is incredible luck!" he exclaimed finally. "The sonde shows terbium, tantalum and the other metals we need all together in appreciable quantities. They're just under the ice and not far from here!"

"It's almost too good to be true," I said wonderingly. "Those metals are never found all together."

Tharn planned quickly.

"We'll fit a rough sledge and on it we can haul an auxiliary power unit and the big dis-beam, to cut through the ice. We'll also have to take cables and tackle for a hoist."

We soon had everything ready and started across the ice, hauling our improvised sledge and its heavy load of equipment.

The frozen world, brooding beneath the sky that looked out into the emptiness of extra-galactic space, was oppressive. We had hit queer worlds before, but this was the most gloomy I had ever encountered.

The drift of stars that was our galaxy sank behind the horizon as we went on, and it grew even darker. Our krypton lamps cut a white path through the somber gloom as we stumbled on, the metal feet of our heavy suits slipping frequently on the ice.

Dril stopped frequently to make further checks with the radio sonde. Finally, after several hours of toilsome progress, he looked up from the instrument and made a quick signal.

"This is the position," he declared. "There should be deposits of the metals we need only a hundred feet or so beneath us."

It didn't look encouraging. We were standing on the crest of a low hill of the ice, and it was not the sort of topography where you would expect to find a deposit of those metals.

But we did not argue with Dril's findings. We hauled the auxiliary power unit off the sledge, got its little ato-turbine going, and hooked its leads to the big dis-beam projector which we had dismounted from the bows of our ship.

Tharn played the dis-beam on the ice with expert skill. Rapidly it cut a ten-foot shaft down through the solid ice. It went down for a hundred feet like a knife through cheese and then there was a sudden backlash of sparks and flame. He quickly cut the power.

"That must be the metal-bearing rock we just hit," he said.

Dril's voice was puzzled.

"It should be seventy or eighty feet lower to the metal deposits, by the sonde readings."

"We'll go down and see," Tharn declared. "Help me set up the winch."

We had brought heavy girders and soon had them forming a massive tripod over the shaft. Strong cables ran through pulleys suspended from that tripod and were fastened to a big metal bucket in which we could descend by paying out cable through the tackle.

Only two of us should have gone down, really. But somehow, none of us wanted to wait alone up on the dark ice, nor did any of us want to go down alone into the shaft. So we all three crowded into the big bucket.

"Acting like children instead of veteran star explorers," grunted Tharn. "I shall make a note for our psychos on the upsetting effect of conditions on these worlds at the galaxy edge."

"Did you bring your beam guns?" Dril asked suddenly.

We had, all of us. Yet we didn't know quite why. Some obscure apprehension had made us arm ourselves when there was no conceivable need of it.

"Let's go," said Tharn. "Hang onto the cable and help me pay it out, Oroc."

I did as he bade, and we started dropping smoothly down into the shaft in the ice. The only light was the krypton whose rays Dril directed downward.

We went down a hundred feet, and then we all cried out. For we saw now the nature of the resistance which the dis-beam had met. Here under the ice there was a thick stratum of transparent metal, and the dis-beam had had to burn its way through that.

UNDERNEATH the burned-out hole in that metal stratum there was—nothing. Just empty space, a great hollow of some kind here beneath the ice.

Tharn's voice throbbed with excitement.

"I'd already begun to suspect it. Look down there!"

The krypton beam, angling downward into the emptiness below us, revealed a spectacle which stunned us.

Here, beneath the ice, was a city. It was a great metropolis of white cement structures, dimly revealed by our little light. And this whole city was shielded by an immense dome of transparent metal which withstood the weight of the ice that ages had piled upon it.

"Our dis-beam cut down through the ice

and then through the dome itself," Tharn was saying excitedly. "This dead city may have been lying hidden here for ages."

Dead city? Yes, it was dead. We could see no trace of movement in the dim streets as we dropped toward it.

The white avenues, the vague facades and galleries and spires of the metropolis, were silent and empty. There was no air here. There could be no inhabitants.

Our bucket bumped down onto the street. We fastened the cables and climbed out, stood staring numbly about us. Then we uttered simultaneous cries of astonishment.

An incredible thing was happening. Light was beginning to grow around us. Like the first rosy flush of dawn it came at first, burgeoning into a soft glow that bathed all the farflung city.

"This place can't be dead!" exclaimed Dril. "That light—"

"Automatic trips could start the light going," said Tharn. "These people had a great science, great enough for that."

"I don't like it," Dril murmured. "I feel that the place is haunted."

I had that feeling, too. I am not ordinarily sensitive to alien influences. If you are, you don't get accepted by the Star Service.

But a dark, oppressive premonition such as I had never felt before now weighed upon my spirits. Deep in my consciousness stirred vague awareness of horror brooding in this silent city beneath the ice.

"We came here for metal, and we're going to get it," Tharn said determinedly. "The light won't hurt us, it will help us."

Dril set up the radio sonde and took bearings again. They showed strongest indications of the presence of the metals we needed at a point some halfway across the city from us.

There was a towering building there, an enormous pile whose spire almost touched the dome. We took it as our goal and started.

The metal soles of our pressure suits clanked on the smooth cement paving as we walked. We must have made a strange picture—we three in our grotesque metal armor tramping through that eerily illuminated metropolis of silence and death.

"This city is old indeed," Tharn said in a low voice. "You notice that the buildings have roofs? That means they're older than—"

"*Tharn! Oroc!*" yelled Dril suddenly, swerving around and grabbing for his beam pistol.

We saw it at the same moment. It was rushing toward us from a side street we had just passed.

I can't describe it. It was like no normal form of life. It was a gibbering monstrosity of black flesh that changed from one hideous shape to another with protean rapidity as it *flowed* toward us.

The horror and hatred that assaulted our minds were not needed to tell us that this thing was inimical. We fired our beams at it simultaneously.

The creature sucked back with unbelievable rapidity and disappeared in a flashing movement between two buildings. We ran forward. But it was gone.

"By all the devils of space!" swore Dril, his voice badly shaken. "What was *that?*"

Tharn seemed as stunned as we.

"I don't know. It was living, you saw that. And its swift retreat when we fired argues intelligence and volition."

"Ordinary flesh couldn't exist in this cold vacuum—" I began.

"There are perhaps more forms of life and flesh than we know," muttered Tharn. "Yet such things surely wouldn't build a city like this—"

"There's another!" I interrupted, pointing wildly.

The second of the black horrors advanced like a huge, unreared worm. But even as we raised our pistols, it darted away.

"We've got to go on," Tharn declared, though his own voice was a little unsteady. "The metals we need are in or near that big tower, and unless we get them we'll simply perish on the ice above."

"There may be worse deaths than freezing to death up there on the ice," said Dril huskily. But he came on with us.

OUR progress through the shining streets of that magically beautiful white city was one of increasing horror.

The black monstrosities seemed to be swarming in the dead metropolis. We glimpsed and fired at dozens of them. Then we stopped beaming them, for we didn't seem able to hit them.

They didn't come to close quarters to attack us. They seemed rather to follow us and *watch* us, and their numbers and menacing appearance became more pronounced with every step we took toward the tower.

More daunting than the inexplicable creatures were the waves of horror and foreboding that were now crushing our spirits. I have spoken of the oppression we had felt since entering the city. It was becoming worse by the minute.

"We are definitely being subjected to psychological attack from some hostile source," muttered Tharn. "All this seems to be because we are approaching that tower."

"This system is on the edge of the galaxy," I reminded. "Some undreamed-of creature or creatures from the black outside could have come from there and laired up on this dead world."

I believe we would at that point have turned and retreated had not Tharn steadied us with a reminder.

"Whatever is here that is going to such lengths to force us to retreat is doing so because it's afraid of us! That argues that we can at least meet it on equal terms."

We were approaching the wide flight of steps that led up to the vaulted entrance of the great tower. We moved by now in a kind of daze, crushed as we were by the terrific psychic attack that was rapidly conquering our courage.

Then came the climax. The lofty doors of the tower swung slowly open. And from within the building there lurched and shambled out a thing, the sight of which froze us where we stood.

"*That* never came from any part of our own galaxy!" Dril cried hoarsely.

It was black, mountainous in bulk and of a shape that tore the brain with horror. It was something like a monstrous, squatting toad, its flesh a heaving black slime from which protruded sticky black limbs that were not quite either tentacles or arms.

Its triangle of eyes were three slits of cold green fire that watched us with hypnotic intensity. Beneath that hideous chinless face, its breathing pouch swelled in and out painfully as it lurched, slobbering, down the steps toward us.

Our beams lashed frantically at that looming horror. And they had not the slightest effect on it. It continued to lurch down the steps. And, most ghastly of all, there was in its outlines a subtly hideous suggestion that it was parent, somehow, to the smaller horrors that swarmed in the city behind us.

Dril uttered a cry and turned to flee, and I stumbled around to join him. But from Tharn came a sharp exclamation.

"Wait! Look at the thing! It's *breathing!*"

For a moment, we couldn't understand. And then dimly, I did. The thing was obviously breathing. Yet there was no air here!

Tharn suddenly stepped forward. It was the bravest thing I have ever seen done by a member of the Star Service. He strode right toward the towering, slobbering horror.

And abruptly, as he reached it, the mountainous black obscenity vanished. It disappeared like a clicked-off televisor scene. And the black swarm in the city behind us disappeared at the same moment.

"Then it wasn't real?" Dril exclaimed.

"It was only a projected hypnotic illusion," Tharn declared. "Like the others we saw back there. The fact that it was breathing here where there is no air, gave me the clue to its unreality."

"But then," I said slowly, "whatever projected those hypnotic attacks is inside this building?"

"Yes, and so are the metals we want," Tharn said grimly. "We're going in."

The ceaseless waves of horror-charged thought beat upon us even more strongly as we went up the steps. Gibbering madness seemed to shriek in my brain as we opened the high doors.

And then, as we stepped into the vast, gleaming white nave of the building, all that oppressive mental assault suddenly ceased.

Our reeling minds were free of horror for the first time since we had entered this dead city. It was like bursting out of one of the great darkness clouds of the galaxy into clear space again.

"Listen!" said Tharn in a whisper. "I hear—"

I heard, too. We didn't really hear, of course. It was not sound, but mental waves that brought the sensation of sound to our brains.

It was music we heard. Faint and distant at first, but swelling in a great crescendo of singing instruments and voices.

The music was alien, like none we had ever heard before. But it gripped our minds as its triumphant strains rose and rose.

There was in those thunderous chords the titanic struggles and hopes and despairs of a race. It held us rigid and breathless as we listened to that supernal symphony of glory and defeat.

"They are coming," said Tharn in a low voice, looking across the white immensity of the great nave.

I saw them. Yet oddly, I was not afraid now, though this was by far the strangest thing that had yet befallen us.

Out into the nave toward us was filing a long procession of moving figures. They were the people of this long-dead world, the people of the past.

They were not like ourselves, though they were bipedal, erect figures with a general resemblance to us in bodily structure. I cannot particularize them, they were so alien to our eyes.

AS THE music swelled to its final crescendo and then died away, the marching figures stopped a little away from us and looked at us. The foremost, apparently their leader, spoke, and his voice reached our minds.

"Whoever you are, you have nothing more to fear," he said. "There is no life in this city. All the creatures you have seen, all the horror that has attacked you, yes, even we ourselves who speak to you, are but phantoms of the mind projected from telepathic records that are set to start functioning automatically when anyone enters this city."

"I thought so," whispered Tharn. "They

could be nothing else."

The leader of the aliens spoke on.

"We are a people who perished long ago, by your reckoning. We originated on this planet"—he called it by an almost unpronounceable alien name—"far back in your past. We rose to power and wisdom and then to glory. Our science bore us out to other worlds, to other stars, finally to exploration and colonization of most of the galaxy.

"But finally came disaster. From the abyss of extra-galactic space came invaders so alien that they could never live in amity with us. It was inevitable war between us and them, we to hold our galaxy, they to conquer it.

"They were not creatures of matter. They were creatures made up of photons, particles of force—shifting clouds capable of unimaginable cooperation between themselves and of almost unlimited activities. They swept us from star after star, they destroyed us on a thousand worlds.

"We were finally hemmed in on this star system of our origin, our last citadel. Had there been hope for the future in the photon race, had they been creatures capable of creating a future civilization, we would have accepted defeat and destruction and would have abdicated thus in their favor. But their limitations of intelligence made that impossible. They would never rise to civilization themselves nor allow any other race in the galaxy to do so.

"So we determined that, before we perished, we would destroy them. They were creatures of force who could only be destroyed by force. We converted our sun into a gigantic generator, hurling some of our planets and moons into it to cause the cataclysm we desired. From our sun generator sprang a colossal wave of force that swept out and annihilated the photon race in one cosmic surge of energy.

"It annihilated the last of us also. But we had already prepared this buried city, and in it had gathered all that we knew of science and wisdom to be garnered by future ages. Some day new forms of life will rise to civilization in the galaxy, some day explorers from other stars will come here.

"If they are not intelligent enough to make benign use of the powers we have gathered here, our telepathic attacks should frighten them away. But if they are intelligent enough to discern the clues we leave for them, they will understand that all is but hypnotic illusion and will press forward into this tower of our secrets.

"You, who listen to me, have done this. To you, whoever and of whatever future race you may be, we bequeath our wisdom and our power. In this building, and in others throughout the city, you will find all that we have left. Use it wisely for the good of the galaxy and all of its races. And now, from we of the past to you of the future——farewell."

The figures that stood before us vanished. And we three remained standing alone in the silent, shimmering white building.

"Space, what a race they must have been!" breathed Tharn. "To do all that, to die destroying a menace that would have blighted the galaxy forever, and still to contrive to leave all that they had gained to the future!"

"Let's see if we can find the metals," begged Dril, his voice shaky. "All I want now is to get out of here and take a long drink of *sanqua*."

We found more than the metals we needed. In that wonderful storehouse of alien science, we found whole wave generators of a type far superior to ours, which could easily be installed in our crippled ship.

I shall not tell of all else we found. The Star Service is already carefully exploring that great treasury of ancient science, and in time its findings will be known to all the galaxy.

It took labor to get the generators back up to our ship, but when that was done, it was not hard to install them. And when we had fused a patch on our punctured hull, we were ready to depart.

As our ship arrowed up through the eternal dusk of that ice clad world and darted past its smoldering dying sun on our homeward voyage, Dril took down the bottle of *sanqua*.

"Let's get these cursed suits off, and then I'm going to have the longest drink I ever took!" he vowed.

We divested ourselves of the heavy suits at last. It was a wonderful relief to step out of them, to unfold our cramped wings and smooth our ruffled feathers.

We looked at each other, we three tall bird-men of Rigel, as Dril handed us the glasses of pink *sanqua*. On Tharn's beaked face, in his green eyes, was an expression that told me we all were thinking of the same thing.

He raised the glass that he held in his talons.

"To that great dead race to whom our galaxy owes all," he said. "We will drink to their world by their own name for it. We will drink to Earth."

●

Next Issue's Complete Fantastic Novel: THE DARK WORLD, by HENRY KUTTNER

Flan saw the destruction of the malignant life

THE UNBROKEN CHAIN

By JOHN RUSSELL FEARN

Braving countless dangers, across hundreds of centuries and through a myriad past lives, Drath Gofal seeks knowledge!

UGH-WAH, of the Fourth Glacial Age, did not know that people of the future would call him a Neanderthal man. In fact he knew very little about anything except hunting, eating, sleeping, and keeping warm—until one day he suddenly began to devise more elaborate weapons for the snaring and slaying of the bigger beast which forever threatened safety. This feat gained for Ugh-Wah the reputation of being a wizard, and because of it distrust was bred among the others of his breed—a childish superstition of his powers.

Particularly when he talked in his boastful, snarling jargon of visions. He said he had seen landscapes that had upright men on them, men who went up and down in strange machines, who actually made use of the flaming ball that buried itself every night and was reborn every morning. To Ugh-Wah, though he barely understood what he was talking about, it was all very real—until he began to realize that he had perhaps said too much.

Distrust was all about him. Even his own mate, Gu Lak, was suspicious of him, alarmed at the strange light in his fierce, almost hidden little eyes.

Then came a day when Ugh-Wah, foraging, found himself in deadly danger. During his hunt for food he turned and shambled off, to stop abruptly and wheel round at the sound of mighty feet pounding behind him. For one short second he stood in paralyzed horror before an advancing mammoth whose tiny ruby-red eyes were sparkling with fury.

Ugh-Wah wheeled and began to run across the ice-caked ground, shouting warnings at the top of his croaking voice. Behind him the mammoth screamed and trumpeted. The others of the tribe swung around at Ugh-Wah's yells and were instantly on the defensive. Then they became motionless with awe at an amazing sight.

Ugh-Wah, not ten yards in front of the mammoth, suddenly began to become transparent, even as he ran! The watchers could see the mammoth through his fading body.

In two seconds Ugh-Wah had disappeared, and at that identical moment a vast, overwhelming explosion cannonaded from the spot where he had been. The tribe fell back in screaming, disorganized terror before a blinding flash of flame and terrific concussion!

The tribe soon forgot all about Ugh-Wah, all save his mate—and she silently remembered that he had saved the lives of all in the tribe by the explosion. But how? That was where her undeveloped brain stumbled . . .

CLIFFORD DELTHORPE was the toughest problem the Board of Directors of Delthorpe's Bank had to contend with. Because he had inherited virtual ownership of the Bank from his father he was in effect the President of it—but what he knew about banking could have been written on his gold cuff-links. He left it all to the Directors and spent his time in and out of New York's social spots, using up the money his tight-fisted father had withheld from him. Which was why Delthorpe's Bank preferred his room to his company.

His wife Fay was just as bad—a former actress, shallow and vain, conspicuously devoid of culture. But she had the redeeming virtue of honestly admitting that she loved Cliff only for his money, a confession which did not worry him in the least. In fact nothing ever worried him—he had too much money for that. Which was the reason Fay got the shock of her dizzy life at breakfast one morning when Cliff refused to agree to her idea of a protracted, round-the-world tour.

"But why not?" she demanded, her egg-spoon in mid-air. "I thought we fixed it all up yesterday?"

Cliff looked at her thoughtfully. There was puzzled indignation on her pretty face, the prettier indeed for its morning absence of cosmetics.

"Yesterday has gone, Fay. It's what I say this morning that counts. The cruise is off. We're going to do something useful instead —build machinery!"

"What!" the girl bleated. "But—but I've ordered my outfit for the trip. Done everything! You just can't—"

"I control the money," Cliff snapped. "What I say goes! Get it through your empty head, Fay, that I'm resolved to do something with my life even if you are not. I've got work to do in the matter of straightening out humanity's problems."

Fay could not speak so she just stared blankly.

"Machinery," Cliff whispered softly, at length. "Machinery incorporating electronic power."

It was too much for Fay. She got to her feet in sudden anger.

"Look here, Cliff, I've had enough of this clowning! If you think I'm going to have a darned good holiday canceled while you drool about electrons and—and things, you're crazy! I won't—"

She broke off, her eyes widening as Cliff looked at her steadily. It was not the Cliff Delthorpe she was accustomed to knowing. That look in his gray eyes was one of mental force, shattering and omniscient, breaking down all her individual desires.

For nearly five seconds she stood in paralyzed amazement before his gaze. Then she flung herself from the room and slammed the door. Cliff relaxed a little and rubbed his dark hair in a worried manner. Going over to the sideboard he poured himself a stiff drink and meditated over his plan.

"Maybe lunacy," he mused, staring into the glass. "Grandfather Delthorpe went nuts —but figures did it for him. Maybe I've got the same complaint. Only figures that have interested me so far have been girls'."

He went to the mirror and studied himself, saw nothing unusual. At the back of his mind swirled odd little notions and visions —cities of supreme design reared against a dying sun—machinery of incredible efficiency.

Machinery! That did something to him. He went over to the writing desk and tugged pencil and paper towards him, began to draw . . .

In the ensuing days it was increasingly evident to Fay that something was radically wrong with Cliff. He became less and less like his normal self and went off into his curious, dictatorial—yet oddly brilliant—

moods without warning.

He talked with an unquestionable accuracy about electrons, wave-packets, continuous union of mentality, time and space lines, and various other scientific matters which were utterly over Fay's head. He bought a plot of land out of town and had a concrete laboratory erected on it, to which machinery was delivered and gradually assembled.

Fay watched all this with a certain futility, tried once to get a brain specialist to see Cliff, until his deadly rage at the suggestion frightened the life out of her. From that point onwards she sought some relief from the nervous tension governing her.

She revived her ideas for a world tour and spent the time with Dick Morrison, an old flame, leaving Cliff to his own devices. Her own pleasure was far more important than this strange behavior anyhow—though she did secretly wonder what he was driving at.

WITHIN two months Cliff had become completely absorbed by his ideas and had undergone a strange metamorphosis of character. He deserted the city apartment and normal ways of living, appointed a proxy to handle his connections with the Bank. Working alone—Bronson occasionally bringing him a fresh supply of provisions and laundry—he devised machines of various shapes and sizes, machines which bristled with tubes and coils as remarkable as they were revolutionary.

Nobody was admitted to this laboratory except Bronson, and—when she ran short of money—Fay. It was her first, and she hoped her last, visit. To her inward surprise she found Cliff in a more tractable mood than usual, a curious half and half state, but more understandable, more the man she had married. And yet there was still something mystifying about him.

Fay spoke peevishly, by way of opening. "At least I ought to have an explanation!" She gazed round on the banked machinery. "For instance, what is all this stuff for?"

"World betterment, I hope," Cliff answered. "Eventually, that is. What puzzles me is I'm not quite so sure about the whole thing as I was when I started."

"Still the same old gag," she sighed. "Why can't you be yourself and throw this junk away?"

"That's all it means to you?" he asked seriously.

"What else do you expect? World reformers are either nuts, or else a cinch for a kick in the pants."

He considered, ignoring her bitterness.

"There's a reason for all this," he muttered. "But I don't know yet what it is. I've been forced to take stock of myself recently, and I've arrived at a pretty definite conclusion. An intellectual force, somewhere, is trying to establish a contact with my mind. It may be something in the future. I've had curious visions which might apply to a time to come. Yet I'm definitely linked up with something else, and this something—far as I can tell—believes that the mental line of each individual is continuous from beginning to end of time."

Fay gazed at him, mystified.

"Don't tell me you include reincarnation among your tricks!" she burst out scornfully.

"Call it that if you like, but yours is a primitive term," Cliff answered curtly. "It would be more correct to say that a man—or woman—never really dies— No, listen to me a moment! The mind, which had its first matter-manifestation in the amoeba, grows in knowledge during the course of its evolution, and during that evolution, it manifests myriads of different matter states from amoeba to future man until, at the finish that mind has so perfected itself that it doesn't need matter any longer for the purposes of expression, and so becomes pure intelligence."

"And of course, when we die, we're just playing hookey?" Fay asked cynically.

"The body dies, Fay, not the mind." Cliff's voice sounded as though he were talking to a child. "The mind lives on and expresses itself again through another matter form. That's what I mean by an unbroken chain of mentality from beginning to end. After all, many of the present day scientists are pretty convinced of the fact. Eddington, for instance, in his 'Nature of the Physical World,' refers to consciousness by saying, 'consciousness is not sharply defined, but fades in subconsciousness, and beyond that must be postulated something indefinite but yet continuous with our mental nature'."

Fay's eyes had become frankly contemptuous.

"If you aren't the world's prize sap! A multimillionaire, and you go haywire over a scientific theory! Anyhow," she went on impatiently, "it doesn't mean a thing to me, Cliff. I'm more interested in practical things, like enjoyment of money and—and a trip around the world."

She stopped and screwed up her painted brows in unaccustomed thought for a moment.

"Did you say something in the future is affecting you?" she asked slowly.

"I think so, yes."

"But how on earth can it? The future isn't here yet."

CLIFF smiled tolerantly. "It isn't here, but it exists. Past, present, and future always exist. We move along a definite course

in Time—and that course is evolution. The unknown force which has every atom and every star in its appointed place has just as surely mapped out the road of Time. We pass along it to some ultimate stage, experiencing on the way what scientists call 'instants.' Eddington calls them 'special frames.' Just as on an ordinary train journey you'd experience different stations at different scheduled times. If you went from New York to Los Angeles, for instance, you wouldn't deny that Los Angeles would be at the end of the line, would you? That represents man's conquest over space and distance. How simple it must be to a greater power, then, to arrange the future at which we must arrive in due course."

"Heaven save us!" Fay groaned. "This gets worse! Anyway it still does not explain how the future can affect the present—can affect you."

"But it does!" Cliff insisted. "A person at the end of time has one very singular advantage—in fact two advantages. He has a profound scientific mentality for one thing, and for another he is able to recapture the vibrations of a past time. Even today we admit the possibility of being able to trap light and sound waves from a past time, but we haven't the necessary mental development to work it out.

"Everything that is seen, heard, or experienced is caused by the activity of electrons and dissipation of enegry, all of which is distributed somewhere in the Universe and can, by machinery complicated and intricate enough, be recalled and refitted into place.

"If I had that power I might be able to see my past selves stretching away right down through history. Unfortunately I have only a limited brain. But wherever this force which is guiding me may be it's taught me plenty. Especially in the knowledge of how to build machinery to improve the world. I still have a lot to do."

Fay tightened her lips. Then with a helpless glance, she went out of the laboratory and into the small living room off the laboratory. She spent half an hour trying to decide what she ought to do. But the decision was taken out of her hands.

Just as she had made up her mind to leave, that living room, the laboratory, and everything attached thereto, went up in the mightiest explosion New York had known in many years . . .

* * *

The curiously contoured, big-pated figure moved very slightly in his chair, stretched out a lean knuckled claw of a hand and pulled a switch. A periscope screen came into life and pictured a view of the world existing outside this buried, Arctic laboratory. It was not a cheerful view, but none the less it was one to which this being, Drath Gofal, was accustomed.

Stretching away to the everlasting, brilliantly cold stars yawned ice fields, bordered to the west by a mountain range. Gofal might have imagined himself alone on the planet were it not for the fact that he knew, beyond the mountains, the last men of his race were eking out a waning existence in the slight but still noticeable warmth of a red, dying sun. Everlasting sun, even as just here there was everlasting dark.

The ceaseless struggle of tidal drag was over. Earth swung round her master with one face always towards him, wabbling only slightly on a faint libration which occasionally brought the barrier reefs of Twilight Mountains into the sunshine and melted the accumulated snow and ice to provide water for the last man.

Strange, inhospitable world! The husk of a once beautiful planet of soft winds, expansive seas, and life-giving sunshine. Only the stars seemed unchanged, and even they were misted by the presence of embryonic rings. The moon had returned to Earth, broken up.

Synthetic air, water just sufficient to maintain life by melting processes— Man might live on the sunward side for many thousands of years with such perfect science and synthetic powers at his command—save perhaps for one thing. The Ice Life.

Drath Gofal, out here in this specially constructed laboratory, erected in the first instance for quite a different purpose, was so far the only man—excepting his assistant Flan—who had seen the strange invader. Microscopic, destructive, insatiable life, spawning in the ice itself, life that in truth belonged to other barren worlds, that had been spewed on Earth in spore form when drawn by the moon's attraction in its Earthward movement. Life which existed and thrived at 500 degrees below zero Centigrade —tiny organisms which digested the water content of the ice, life that would one day adapt itself to sunward-side conditions and devour everything before it unless something happened to bring sudden and extensive heat to this Arctic waste and destroy the queer, malignant bacteria in its early stages.

DRATH GOFAL sighed. "Heat or else explosive. Heat we cannot afford because we need every scrap we can manufacture both here and in the city. And explosive would certainly wreck this laboratory completely and ruin my experiments. A pity indeed that it happens to be directly overhead . . ."

He looked at the periscope screen again and studied the view of a starlighted, brownish area about a mile and a half in width lying immediately above this buried retreat.

"At the moment, Flan, we can do nothing," he observed. "We shall have to decide sooner or later which will have to go—this laboratory or the Ice Life." He turned and looked at Flan's face beneath its bulging head. "You followed out my orders and advised them in the city of the presence of this life?"

"Yes, Gofal—and also warned them to make no attack on it for fear of destroying us."

Like his superior, Flan was a short, big-chested, big-headed being with a muscular pipe for a neck and thin arms and legs. His slightly smaller head was the sole indication of his inferior position to Drath Gofal himself.

Drath Gofal switched the screen off at last, rose from his chair with a slight clink of metallic clothing, and walked across to the machinery jamming the main portion of the laboratory. For a time he stood musing before a sprawling mass of tubes, globes, and electrical equipment.

Presently he turned.

"I shall have to finish my work without delay," he said thoughtfully. "And you know, Flan, the more I dwell upon the ultimate possibilities of probing back along a mental lineal descent, the more I think we were wise in burying ourselves here, away from all interference, and likewise from all possible disturbances we may create in the final stages of the experiment. There may be danger." He paused gravely. "You realize that?"

"Science only gives her greatest secrets to those who are not afraid," Flan answered, unperturbed. He belonged, like Gofal, to a race schooled through ages to be absolute masters of emotion. His small but brilliant eyes surveyed the machinery.

"You have definitely proved then, Gofal, that such things as individual mental lines exist?" he asked.

"Beyond all doubt." Gofal nodded his massive bald pate. "From the dawn to the close of evolution everything is mapped out. Since it is beyond all question that simultaneity of instants exist all down an individual line, it is possible to make contact with one's past self—or more accurately the matter manifestation existing as one's past self—at any time in the past. That was why we set out to master the forces of electron waves."

"You set out," Flan corrected. "I have barely been able to follow your postulations. I realize only that your mind—my mind—every mind, has evolved from the beginning and has possessed various matter forms, which forms are changed only at the mutation named death. I understand, too, that all Time can be mentally explored. But beyond that—"

Gofal interrupted him.

"I have no reason to know that at every state in the past a certain order of electron waves was in force. While it is almost impossible to discover the exact electron formations of inorganic, non-intelligent substances, it is possible by mathematics to determine the exact wave form packets that made up any specified individual, myself for instance.

"Bear in mind, Flan, the fundamental truth that there was more organization in the world yesterday than there is today. The old-time scientists didn't know how to calculate the exact extent or disorganization in a single living being, though they did admit that any change occurring to a body, which can be treated as a single unit, can be undone. If they had known, and had built mathematical machines such as we have here, they would have been able to find the exact matter state of any unit or living person at any time in the past.

"With these machines of mine we know the exact entropy, the exact disorganization of energy, of any living object in the past. As I have said, inorganic substances do not concern us. I chose my own lineage because it is one in which I'm most interested. As you have seen, I merely placed myself in the core of these mathematical machines and allowed them to calculate, from the electronic state I now possess, exactly what organization I possessed at an earlier instant."

GOFAL permitted an expression of satisfaction to spread over his face.

"To a certain extent I was successful," he went on pensively. "It is of course impossible to move physically in Time, and therefore my body remained where it is. But my mind, not being limited by any material force, returned down the lineal line, and when a particular instant of organization arose to which my mind definitely applied, I automatically became part of it. In truth, I took on a former body, and since Time is unalterable, I did exactly what I had done before at that period.

"The only difference lay in the fact that there was a mental overlap from my present knowledge. This had the effect of making me far cleverer than was normal to that past state. But as records have shown, I was clever in that past state. Therefore Time did not err.

"In my first venture I traveled back mentally to the limit of dawning intelligence—a very early Neanderthal form. I think I was regarded as something of a wizard. I remember that my last experience there was of building extremely cunning traps for animals, despite a growing distrust among my people. Then I came back here and fixed the organization for a much more advanced age."

(Turn to page 96)

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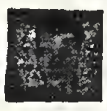

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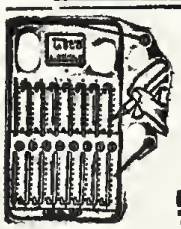

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Gofal paused and smiled faintly at his recollections.

"I must have been a fool in the early modern period," he murmured. "I spent my time drinking strange substances that fuddled me and exchanged curious paper sheets that gave me anything I wanted. Here, again, though, my present knowledge overlapped a little and I unwittingly changed my nature into that of a true scientist. I built machinery with which I honestly intended to better a very unhappy world. I found, though, that I was considered a lunatic. I was despised by my very small-brained wife, in spite of my vague effort to explain things and give her an underlying glimpse of my real intentions. In the end I got weary of it and came back here."

There was a pause. Flan waited attentively. Presently Gofal uttered a deep sigh.

"And yet, Flan, some of those early modern scientists had the right idea," he resumed. "I mean ideas on which our modern science is built. Many of them disbelieved in death and pointed to child prodigies in music, science, and religion as reincarnated geniuses carrying their knowledge over a mythical gulf. They pointed to so-called seers as people who knew the future, not realizing that such folk simply had a better sense of their Time-line than others. Still other people had memories of past incidents, memories of having seen certain places before. Dreams, amnesia, many thing that explained the underlying truth that only our science has brought to fruition—the knowledge that real understanding begins where what was formerly called the subconscious region exists."

Gofal stopped talking and regarded his apparatus. Flan still maintained a respectful silence . . .

"The one thing that still remains to be mastered in mental science is memory!" Gofal said at last, clenching his fist. "I have proved that it is possible to retreat mentally and live in a former state, but that is not everything. Think, my friend, of the infinite wisdom that could be encompassed if one had the memory—the clear, vivid remembrance —of everything one had ever done! Think of the storehouse of knowledge, the multimillions of useful little things forgotten in the turmoil of progress. With a complete memory of everything I've ever done since mind began I could accomplish miracles, lay the foundation of a science that could mold the whole Universe to my desires!"

There was a certain fanatic urgency in his voice at the last words. He faced Flan's calm, inscrutable eyes.

"If you have accomplished so much, you

(Turn to page 98)

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can accomplish that," Flan told him. "And if you can do it for yourself, you can do it for others—give our whole race a complete memory stock of knowledge. With that we can defeat—anything," he whispered. Then he frowned slightly. "Unless bringing past memory to a future state is an impossibility?"

"Not at all," Gofal contradicted. "Mental force is outside the realm of time, space, and matter. It is a power of its own, something which cannot be described, something that is! Even to remember what one did a few moments before is proof of that. No matter how far back one remembers it creates no disturbance in the Universe. That is a plain fact. My idea, however, is to make memory crystal clear and not vague."

"But remembrance ends where the birth of an individual begins," Flan pointed out.

THIS observation gratified Gofal. "Exactly so, Flan, but in each matter state we have progressed somewhat. The same mind goes on with the mutation of death alone forming a blank between this physical experience and the one preceding it. That is why, if I eliminated all my matter states preceding this one and left only the mind—which is indestructible—in a state of complete disassociation, I would have a continuous record of my past in my memory now. It is only the individual presence of matter forms, each utilizing a portion of that complete memory stream, which prevents it being continuous."

"But how would you be born?" Flan demanded. "You are at variance with the law of Time, Gofal! By defeating your own physical forms in precedence to this one, you could not exist."

Gofal sighed. "My dear friend, how wrong you are! If a man is utterly blown to pieces it does not stop him being born again, does it? His mind cannot be destroyed, and even though his new body prevents him remembering what happened to his previous forms, his mind is that far advanced. His body is of no account. Indeed, it would not be there at all but for him holding its presence to be a fact mentally. If he could utterly disbelieve in it, it would not exist. Bodies only exist by the force of the mentality held over them. If then I separate the mind of all my previous entities from their matter bodies, they simply cease to be. I am not affected. Yet I shall be the possessor of an unbroken memory chain from the very dawn of intelligence."

"But the inconceivable number of preceding bodies you must have possessed!" Flan cried.

Gofal smiled. "Not so many as you think. With each succeeding body, life has lasted longer until, at our present stage with no untoward hostile influence, we live tens of

thousands of years. According to the mathematical machines I have had seventeen thousand previous matter-existences, and no more. Each one ended in the mutation named death, and each one was packed with experiences which must contain valuable knowledge. Just to move back mentally and study each of these seventeen thousand existences would be impossible, for it would take all eternity and even then I would probably forget a good deal because of lack of union. But if I cut each physical attribute adrift and allow my mind full play, then I shall have the knowledge of all those existences!"

"And you can do this?"

GOFAL looked at his machines thoughtfully.

"Yes I have reason to believe I can. I have thought so from the outset of my experiments, and the presence of this Ice Life now demands that I act quickly. I've already mentioned the mastery of mind over matter, and I have mentioned, too, the individual highly intelligent overlap I carry from this present state of evolution. Assuming then that the disorganization calculators are set at maximum—which is my present state—I allow them to work slowly backwards to the beginning through all my varied states. Also during this entire process, I shall hold in rigid concentration the fact that I am not held by material shackles. Thus all the matter states preceding this one will disappear. I shall indeed force them to do so by superior knowledge.

"By the time I've reached the lowest manifestation of matter, I'll have eliminated all the states of matter between that state and this present one. By that means, when I return here to take over my body again, I'll have the full knowledge of my entire mental past with no material interventions. It will be swift, Flan. Mind is incredibly rapid, infinitely faster than light. Mind takes no more time to remember an incident of a moment before than it does to remember a century. Indeed it is even possible that the two past selves I have already visited will hardly be aware of my present absence, so swiftly shall I resume contact."

"And then?" Flan asked slowly.

"Then I can do as I choose. With such knowledge I can even be rid of this body and become a pure intellectual. In fact I believe I shall. I could do it now if I wished, but that would be of no advantage without past knowledge added to what I already possess. You, my friend, during this process, will see to it that I am kept fed, as on the other occasion . . ."

[*Turn page*]

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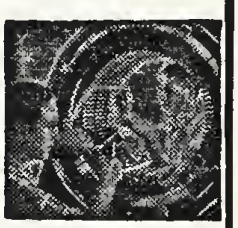

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FLAN said no more, but he wished he could foresee exactly what would happen. He felt that there was something which had not been taken into account. The machines, flawless though they were, were only mechanical, had not the human gift of foresight. Still, since Gofal saw nothing to impede him, it was not Flan's business to argue.

He watched as Gofal seated himself in the sunken chair in the heart of the mighty, incredibly intricate machines which built up past time-matter states from the basis of organization of energy.

"Remember to nourish my body at regular intervals, Flan, no matter how long I may be," Gofal instructed him. "I shall always be linked to it until I return, though I'll not be conscious of the fact."

Flan nodded silently and his tiny eyes watched as Gofal thrust in the main power switches in front of his chair.

Immediately, the same strange happenings as on that other brief journeying through mental realms became evident. Four unwavering bars of vermillion radiance poured from the whirring hearts of the profound mechanisms and bathed the motionless savant, Gofal, in steady fire.

His body became rigid— his eyes stared into vacancy.

He was temporarily a body without an active mind, a body still only visible as a body because of the conscious knowledge of its presence which Gofal still retained deep in his mentality, just as a man is still subconsciously aware of his body though he dreams.

Flan sat down and waited, his eyes glancing ever and again to the queerly fashioned clock on the wall. He tried to picture what must be happening to his master's mind—his whirlwind manifestations as he passed with unerring accuracy over his former states of matter, fitting flawlessly into position as the right states were merged by the machines. Right down through the gulf of mental time in an audacious effort to master all Time's knowledge in one mighty sweep.

Just for an instant Flan questioned if it was not tempting science too far. . . .

True to his orders, Flan kept a steady watch over the motionless form at the machine, fed it with injections on long mechanical arms in order that he might not graze the fringe of the penetrating, mysterious rays built up by complex forces.

In the long, wearying intervals between, he studied the ever growing Ice Life, noted with alarm its tremendous increase.

"Gofal must return soon," he muttered. "If he does not we are endangered and—"

"Gofal has returned!" a voice observed, at his elbow.

Flan swung round, found Gofal right be-

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side him, an inscrutable smile on his wizened face. Flan shot a glance back at the machinery. He had been so lost in thought he had hardly noticed that it had ceased its activity, was rayless and silent.

"Gofal!" he cried. "You've succeeded! You've done what you expected!"

"Everything," the scientist assented calmly. "I was preeminently successful in my efforts. Not a single matter formation of my body remains between this one and the first crudely developed body of lowly intellect which I possessed which, for that very reason I did not trouble to destroy. I have memory as far back as I need it—a colossal storehouse of knowledge. All the myriads of undeveloped ideas, lost in individual lives, are now modeled into a composite whole. So colossal is my knowledge, Flan, I feel that this world is singularly uninviting, almost beneath the scope of my mentality."

Flan's expression changed. He noticed there was a curious, burning light in his master's eyes, a light of tremendous domination and with it a certain insufferable conceit.

"So, you wonder?" Gofal asked softly, reading Flan's mind. "You need not. You see, in detaching my mind from its previous matter bodies I absorbed something of the ego of each. That was unavoidable. In their different ways and different times they were me, and the gift of supreme memory means too a fraction of individual ego from each of those bodies. I am the only absolute, complete man which ever existed—mentally and physically.

"I can wing space, pit my knowledge against the superpowerful intelligences which dwell in the cosmos, master the deepest secrets beyond the furthest stars. In learning all that earthly existence can tell me, I have also learned that Earth is a playground for such an intelligence as I—the jumping-off place for finer glories."

FOR a moment Gofal paused and looked at Flan long and earnestly.

"Flan, I am leaving Earth," he stated simply. "I intend to eliminate this body of mine even as I have its predecessors—eliminate it from all concepts. It is the last body I shall have in the normal way. I want you to leave me and return to our people. If you would learn my secrets and have my knowledge, you must work for yourselves. You have seen my methods—the rest is up to you. I have fields so advanced to conquer that this is the parting of our companionship."

"But—but why must I go?" Flan asked anxiously. "If you depart, what is to stop me remaining here to study your machines? I can complete the details for my own use?"

"These machines are useless to you, Flan. They deal only in the energies relative to

[*Turn page*]

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Without cost or obligation, send your GOLD SEAL $1-A-MONTH Policy for 10 DAYS' FREE INSPECTION.

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If you are mechanically inclined—can hold and use tools it will pay you to learn electrical appliance repairing. Operate from your garage, basement, etc. Work as many hours as you wish—the appliance repairman is his own boss. On many types of repairs it is usual for a repairman to charge on the basis of $5.00 to $6.00 an hour!

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Just out—very latest guaranteed, simple, easy method. Play cowboy songs the Western way in a few minutes by ear. Surprise and amaze your friends. Be in big demand at *parties, camps, public entertainments, on the radio, etc.* 12 Complete Lessons. **SEND NO MONEY.** Pay postman only $1.00 plus postage and C.O.D. charges, or send $1.00 and get EXTRA SONGS all postpaid. (Canada, $1.25 money order only.) Nothing else to buy. Positive money back guarantee. *Rush order today.*
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Amazing rubber mold-making outfit makes perfect flexible molds of plaques, ash trays, bookends, etc. Molds cost 6c to 23c each. Each mold makes hundreds of novelties and gifts to sell for $1.00 apiece and more! No experience necessary. Everything furnished. Quick and easy. Start profitable business in your home—sell to stores, gift shops, friends, resorts, road stands, by mail. Full or spare time. Write for complete FREE details and easy instructions.
SOLO WORKS, Dept. D-825, LOVELAND, OHIO

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Cluthe Sons, Dept. 33, Bloomfield, New Jersey

myself. But the records of their construction are in the city. You can learn about them from those. If you stay here you will be blown to pieces. I discovered something on this particular journey which I had not quite reckoned with before. The effect of destroying a concept of matter results in its very abrupt change into pure energy—the state from which it originally came—through the power of mentality governing it. The form of a body is definitely a mirror of the mind controlling it. A man can think himself into any physical state if he wants to. Remember the old time hypochondriacs.

"So the effect of sudden energy in place of matter produces an explosion of terrific violence. That is what will happen when I depart, what has happened in every state in the past where I have destroyed the concept of my body. Oddly enough, I believe that on two occasions—my Neanderthal and early modern forms—my disappearance was actually of benefit to those left behind. That, however, is beside the point. Since only a body is killed and not the mind I have nothing on my conscience.

"The decision rests with you, Flan. If you are destroyed, you will live again in some other matter state. But if you live as you are, you will be able to follow out my experiments and one day, in some far realm of supreme intellect, we may meet again. Incidentally, my departure will produce sufficient destruction to smash this ice cap for a considerable distance. Energies will be released which will destroy this Ice Life menace completely. You have your choice."

Flan hesitated for a time, looked at the silent figure of the scientist who had mastered the ultimate secrets of matter and mind, had gained memory and knowledge unlimited. Quietly he turned and donned the heavy, insulated suit for wear on the surface.

"You will see me safely out of danger?" he asked.

"Of course."

They bowed to each other with the calm impartiality of their race, looked into each others' eyes for a moment. Then Flan opened the massive airlock which gave access to the ice tunnel leading to the plain above.

He broke into a run as the tunnel's natural slope took him higher and higher, emerging at last through the great air-regulating vent system on the surface. No cold or thin air reached him through his suit. He turned his face towards Twilight Mountains. In his mind's eye he pictured Gofal at the periscope, watching his progress, impatiently noting the minutes passing by.

Finally Flan reached the vast pass through the range giving access to the distant city on the sunward side. Here he turned. He watched the sudden wild pounding and heav-

ing of thousands of tons of ice, the spouting of vivid electric discharges. To his headphones came the rumble of vast underground thunder.

He saw a huge area of water boil in the crumbled ice where the heat had melted it. And he saw something more—the utter incineration of a carpet of malignant brown Arctic Life, forever destroyed by that discharge of electric energy.

Flan's spirits rose. He imagined that supreme mind winging its way invisibly across the infinite towards the eternal stars. With a steadfast heart, the last determination of a last man to follow the only way of science, he turned towards the red-lighted city in the distance.

THE ETHER VIBRATES

(Continued from page 11)

on Terra or even on Pluto. Phooey, Frogeyes, fetch more Xeno. That one put a chill up our back.

ANOTHER CANADIAN CAPER

By Joe Baruch

Dear Sarge: I will take this opportunity to write to your progressing?? mag. Your novel—if that isn't a classic then my name isn't John Henry, and I can assure you that my name is not John Henry.

Quote, "Suddenly Joan did an astounding thing. She snatched his impellers from Curt's hand and *dropped them.*" unquote.

Dear editor, would you please tell where they would fall? Also, when they jumped from the ship the attraction of the larger mass of the spaceship would slowly draw them back. Even if this were not true they would still keep going at the same speed the ship had when they left it until something stopped them.

Here's how I line up the stories:

The Forgotten Man of Space—P. S. Miller—For Once—AAA.

Outlaw World—E. Hamilton—Oooouch!—A.

The Jimson Island Giant—S. Merwin, Jr.—Ooooffe—¼.

The Articles:

The Worlds of Tomorrow...very good idea....AAA

The Futuremen (no comment).....AAA

The Ether Vibrates.....AA

Just one final plea, please keep the nude dames off the cover!!!!—*Vancouver, B. C., Canada.*

Something seems to be happening in Canada, Xeno—I mean, Snaggletooth. The Fans in that semi-frozen land of icicles and mosquitoes, Molson's and tundra, are getting more impudent. Better put a dent in their Heaviside layer while we're en route to vaporize Danas.

As to where the impellers would drop and all the rest—get out in space some time and try it yourself, pee-lot. It can be done, take Ye Sarge's word for it—what's that Wart-ears? You say my word is worth *what?* Careful, or you'll be dipped in the Xeno vats again. You know what happened the last time that happened. This time I won't let Snaggie and Froggie waste time with the atomic scrapers decrusting you.

[*Turn page*]

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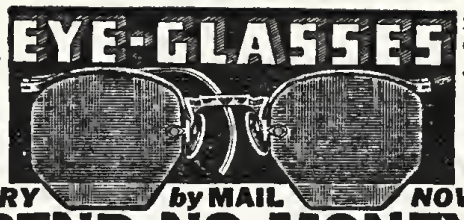

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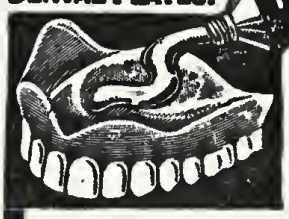

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Improved Newest Plastic Reliner

LASTS FOR MONTHS!

FIT-RITE quickly makes loose, slipping, clattery dental plates fit snugly and comfortably. Eat, talk and laugh naturally and confidently!

FIT-RITE you apply — at Home

Simply squeeze FIT-RITE on your dental plates and put it in your mouth, where it hardens and makes false teeth feel and fit like new. No fuss, no muss—no heating. Not a paste or powder. Becomes a part of plate. You apply it yourself.

FIT-RITE IS 100% O.K. ON ANY DENTAL PLATE

FIT-RITE won't harm any denture or your gums. Tasteless, odorless, sanitary—cleanses and sweetens the mouth and helps prevent gum soreness. It won't come off with scrubbing or washing. EVERY APPLICATION GUARANTEED TO LAST FOR MONTHS OR NO COST.

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SPECIAL—generous package of dental plate cleanser included absolutely free. This instant, brushless cleanser WORKS LIKE MAGIC and will not harm any denture. Try Fit-Rite first.

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Mail This COUPON

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Send 1 tube of FIT-RITE Dental Plate Reliner that you guarantee to satisfy 100%—or it won't cost me a penny.
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An "eye-opening" revelation in sensible and comfortable reducible rupture protection may be yours for the asking, without cost or obligation. Simply send name and address to William S. Rice, Inc., Dept. 1-W, Adams, N. Y., and full details of the new and different Rice Method will be sent you Free. Without hard flesh-gouging pads or tormenting pressure, here's a Support that has brought joy and comfort to thousands—by releasing them from Trusses with springs and straps that bind and cut. Designed to securely hold a rupture up and in where it belongs and yet give freedom of body and genuine comfort. For full information—write today!

As for the dames on the cover, Kiwi Baruch—who's nude? But at least it's an idea—the only one you came up with.

NO SUCH ANIMALS
By Richard E. Wimer

Dear Sarge: I'm writing you in reference to the new STARTLING STORIES, the feature story being Outlaw World. For the first time in a long time I can truthfully say that I really enjoyed reading a Captain Future novel. It has seemed to me that for quite some time that Captain Future's escapades have been rather sterile, but this last one has been more like old times. There is only one thing that I didn't like about it, and that was that it was too short.

And now I'd like to ask you something, what about the first three Captain Future stories. I've tried to buy them, but there just isn't any such animal. Is there any chance of getting them from you? Thanking you in advance for any information you might supply me. —*450 No. 12th Street, San Jose, California.*

Thanks for the praise—we were about due for some, *n'est-ce-pas,* Froggie? And Ye Sarge is honestly sorry he can't help out your back-issue collection. But file copies are scarce on this asteroid, especially for older issues. Perhaps some fan will help you out. We'll give him a quadrupal Saturnian benediction if he will. And now, Wart-ears?

NO SHORTS? HOW IMMODEST!
By Ron, the Mad-Ox

Now Look Here Serge: I know you want to publish Cap Future stories but for the love of Pete publish em in a mag by the name of Cap Future. Why waste all the stories that we might be able to read in SS if it weren't for the Cap Future stories that have appeared? Please take special notice of this (Is Cap Future coming out again?)

However, Outlaw World wasn't too bad. I'm afraid that I must admit that, which is at least partly true (Don't hit me please).

You might as well have left the short stories out. By the way that's not such a bad idea. Why not replace the two or three shorts that you have every issue with a long novelet (or even a short novelet?) 'Nuther thot, it might be a Hall of Fame novelet. You haven't published a long Hall of Fame story in SS. How about it for a change?

I'm waging a campaign against mixing up the ads with the rest of the mag. What the heck, how about giving the fans a break, and not make us wade through the ads when we want to read something else? It's no fun for us and it just makes us mad. Be smart—put the ads in a separate section (they'll still be seen).

How about having a few cartoons (SF and fantasy of course?) It adds something to the mag.

Not that I'm battling for trimmed edges, but they would improve the appearance of the mag and would make it a lot easier for us guys to handle. I also bet that the better outer appearance would sell more than enough extra copies to cover the extra cost.—*R. R. 2, Balls Hill, McLean, Virginia.*

The crop is lean, methinks, Snaggie, old tooth, and the pickings are poor. Ron, the Mad-Ox, indeed. Forsooth, Froggie, fetch the Xenemint. Ye Sarge needs a purge after that one. Trimmed edges—don't they ever want anything else?

And as for the ads—they are what keep our Earth-staff eating. Furthermore, from page 11, on which OUTLAW WORLD began, to page 82, which is far back in the runover past the end of the featured story, only a

trio of spot advertisements appeared. Take a look at other magazines, my voluptuous Virginian, if you think that is bad. You have Ye Sarge seething in his soup. Take it away, Wart-ears, and bring on the next missive.

INVOLUNTARY INJURY
By Charles Mackay

Dear Sarge: Edmond Hamilton is back with a bang! "Outlaw World" is certainly one of the best Captain Future yarns I've ever read, and I've read plenty. "Seven Space Stones" and "Captain Future's Challenge" alone were better. Welcome home, Ed!

The novel is about all that saved the Winter ish from the scrap heap. "Forgotten Man of Space" was only fair and the "Jimson Island Giant" was unspeakable. Why don't you get a real classic, by Clark Ashton Smith for instance, for the Hall of Fame? I haven't read a really good H of F tale since his last appearance with "Beyond the Singing Flame."

Unlike a lot of letter writers to SS, I have no kick to make about the art work. Bergey occasionally surpasses himself (as in the Summer SS and the Fall TWS) and the rest of the time he is acceptable, at least to me.

Another suggestion is that you eliminate everything except the novel and the Hall of Fame epic. Most of the short stories are tripe anyway (last issue's "Incident on Calypso" was an exception), and by cutting them you could put more pages on the long story.

Kicks aside, I think your mag is darn good entertainment. Maybe some day you can bring back CF from its untimely grave. Until then, let's have more of them by Hamilton in SS. Keep up the good work.—*10 Pine Ridge Road, Dorchester 22, Massachusetts.*

Thanks, Charles, old pee-lot, for most of your note. But you did us a serious involuntary injury by your mention of Clark Ashton Smith after the big boner pulled on last issue's cover by Snaggie, Froggie and Wart-ears. However, the DIMENSION OF CHANCE in this issue should compensate. And get a load of that illustration by Stevens. If it isn't a masterpiece of STF art, I'll eat the legs of that giant frog in the foreground. Gourmets say they taste like chicken, but Ye Sarge scorns such lesser Terrean fare.

And you too would seek to remove Ye Sarge's shorts. Tsk, tsk! How lewd! Seriously, Charles, while the Winter issue may have been weak in that department, let's look back a little to see what we can see in that department. Looking back over the past year, and excluding the H of F reprints, the list includes short stories by Frank Belknap Long, Leslie Northern, Ford Smith, Malcolm Jameson, Ed Earl Repp, Murray Leinster and Francis Flagg.

That ain't bad, especially for a year in which too many able writers were engaged in war work of some sort or another and inventories were running low.

Now that such gifted authors as Kuttner, Hamilton and Jack Vance, to mention but a few, are back at their typewriters and a whole new generation is due, don't you think we ought to keep the shorts in the book? Removing them might well be denying a chance to some young author of talent who

[*Turn page*]

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TIGHTENS FALSE TEETH
OR NO COST

Amazing NEW Plastic Reliner
LASTS FROM 4 to 6 MONTHS

NOW—in a jiffy—you can make loose, slipping dental plates fit snug and comfortable. Eat, talk in comfort, laugh freely—for "Gum Gripper" enables you to enjoy that feeling of almost having your own teeth again!

• APPLY IT YOURSELF—AT HOME
"GUM GRIPPER" amazing plastic Reliner tightens dental plates quickly, makes them hold firmly and fit like new! Just squeeze from tube, spread evenly, put plate in mouth, wear it while "Gum Gripper" sets in few minutes. No heating necessary.

• USE ON ANY DENTAL PLATE
"Gum Gripper" will not harm denture or irritate gums. Sanitary, tasteless, odorless. Keeps mouth sweet and clean, prevents sore spots. Application of plastic "Gum Gripper" is guaranteed to last 4 to 6 months—or no cost. Can be scrubbed or washed. Rev. A. J. Wigley, Pittsburgh, Pa., writes: "Best material I ever used. I have not relined my lower teeth for 2 months."

"Best I've Ever Used"

SEND NO MONEY—Order a tube today—it's only $1.00. Fill out and mail coupon below. You'll be delighted! Satisfaction guaranteed or your money back.

FREE Generous size package Dental Plate cleaner included free of extra cost. Cleanses dental plates without brushing. Will not harm denture.

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GUM GRIPPER, Dept. 50-N,
127 N. Dearborn St., Chicago 2, Ill.
Send me a tube of "Gum Gripper." You guarantee it to satisfy—or it will not cost me a penny.
☐ I will deposit $1.00 plus postage with postman when package arrives.
☐ Enclosed is $1.00—You pay postage.
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ARREST HIM, OFFICER!

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Step up your own skill with the facts and figures of your trade. Audels Mechanics Guides contain Practical Inside Trade Information in a handy form. Fully Illustrated and Easy to Understand. Highly Endorsed. Check the books you want for 7 days' Free Examination. Send No Money. Nothing to pay postman. ☐ Refrigeration $4 • ☐ Radio $4 ☐ Pumps & Hydraulics $4 • ☐ Machinist $4 • ☐ Diesel $2 ☐ Plumbers $6 • ☐ Shipfitter $1 • ☐ Welders $1 • ☐ Auto $4 ☐ Mathematics $2 • ☐ Electricity $4 • ☐ Carpenters $6 ☐ Marine $4 • ☐ Blueprint $2 • ☐ Sheet Metal $1.

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has neither the experience nor the reputation needed to qualify for a lead novel assignment?

Ponder it, Kiwi, and *then* make up your mind.

THAT ONTARIAN ANGER

By Ronald Anger

Dear Sarge Sat: After hacking out myriads of fan letters, I could hardly believe my photo-electric cells (handy little gadgets for reading stf mags with covers too lurid for normal eyesight) when I saw my letter in the Winter SS! Whodathunk that the Sarge would, of all people, take pity on me? Beneath that silicon coating beats a heart of gold! Know ye, all fen, I now love the Sarge. Mebbe.

This time I am not going to start with the cover (oh definitely I am not even going to start with the Hall of Fame Classic or the Cap-Future yarn. No! I am looking straight at a big blank space in TEV which is labeled "Where A Joe Kennedy Letter Should Have Been". Oh, Joseph, come back to us! Not even a Chad Oliver epic!

Next, no, *still* not the—uh—cover. No, the stories.

1. The Forgotten Man of Space—I am not rating this yarn ahead of Outlaw World because I hold a Kennedyish grudge against Cap F., but because I thought it *was*, not only the best yarn in the ish, but a *real* Hall of Fame Classic. Perhaps I'm a bit sentimental, but t'wards the end of the yarn, the words got kinda blurred. Mebbe the furnace was smokin'. . . .

2. Outlaw World—I know it's sacrilege, but I'm determined to do it, I am! I am! I am! I'm going to disagree with JK, the Absolute! I *liked* this, the first Captain Future story I've read. I thought it was a nicely written and plotted yarn, and I thought the characterization was particularly brilliant. Ed Hamilton has the same knack of shifting scenes, yet making a coherent story that is shared by few other stf writers. His style is very similar to that of L. Frank Baum, writer of the immortal Oz stories. It's a shame to put the short ahead of this swell yarn, but if I'd put Forgotten Man of Space second, I'm afraid I would have dreamt of a pair of luminous, reproachful eyes. . . .

3. The Jimson Island Giant . . . Well written but not enough explanation. Maybe I'm jest stoopid but what *did* happen to Dupleix?

All the depts. were swell this number.

Sarge, do you ever read a rag called THRILLING WONDER STORIES? *It* had a good cover this Fall!—*520 Highland Avenue, Ottawa, Ontario.*

Since you ask about that most unpopular of STF stories, THE JIMSON ISLAND GIANT, Ye Sarge took the time to check the finale. Dupleix starved to death because, in reducing the size of his island he not only wrecked his plane but so destroyed his shack that he couldn't get into his supplies of food, et cetera, without a bull dozer, which he didn't have handy at the moment. Enough said.

But your snide and indirect attack on the cover was neither subtle nor justified to this old space dog's way of thinking. What's that, Snaggie, old tooth? Did my eight ears deceive me, or did you. . . . I thought so. To the Xeno vats with him. Oh, all right, so you're sorry. But, bub, you're kind of late with that apology. Ye Sarge does so think—in his own inimitable fashion.

OFF WISCONSIN!

By D. L. Comber

Dear Sarge: I don't suppose you give out the ad-

dresses of any of your authors, so just how does one go about writing a fan letter? Is it through your magazine? I'm a rabid reader of TWS as well as SS and have only one complaint—they don't appear on the stands often enough!

Edmond Hamilton and his Curt Newton, of course, are my favorites, and I hope now that E. H. is out of the Army, we have one of his out-of-this-world stories every issue. The authoress I really enjoyed was Leigh Brackett and I've been watching for another story by her.

Her description of herself in "Meet the Author" was swell, especially the part about lying on the sand and fishing. It sure made me homesick, for that's just what I (in my pre-marital days) used to do—all the way from Santa Monica to Laguna Beach.

Hoping you can give me her address and, if not, tell her how much I enjoyed her story and description. I'll close with a great "skoal" to your magazines and authors.—*Bremerton, Washington.*

Kiwi Comber, you may not know how to write a fan letter, but you just did. That was a very nice note. As to giving out addresses, it is against our rules to do this.

But should you care to write Miss Brackett, a letter addressed to her in care of this magazine will be forwarded to her. She is a gracious young lady.

NEW PARTY FOR ANIMALS OR SOMETHING

By James H. Madole

Dear Sarge: I have not written to your magazine before, but I find both the stories and the readers' comments extremely interesting. I refer in particular to those fans who have formed STF groups. These groups look forward to a better world in the future, somewhat similar to the future worlds described in your publication.

This is an excellent idea and a worthy project and I might add it is an idea that my group is already working on. We, however, are working on the principle of bringing that world about today and not in the far distant future.

Our group is known as the Animalist Party. We are now attempting to bring together all the Science Fiction groups into one unit for the purpose of creating our better world now. I should like to hear from all people and groups who are interested in this project.—*224 E. Main Street, Beacon, New York.*

Quick, Frogeyes, pull that plug! Ye Sarge should have known better. A gang that picks such a naively un-apropos name for itself is hardly going to inspire confidence among STF groups to say nothing of the world at large. Seriously, kiwis, your intent is noble, but your resources sound weak. Keep plugging, however, and don't mind the leers and sneers of this cynical old astrogator. He's seen old Terra "improved" too many times with dire results to approve of same.

Perhaps if all the drawing of the alleged brave new world to come didn't make everything look like a chromium-trimmed hot-dog stand, he'd be for it more strongly. But hot dogs and Xeno don't mix. *Burrrrrrpppp!*

GEORGIA KISS-OFF

By Merle Franklin

Hello, Sarge! I was walking down the street and, by chance, stopped at my magazine stand. Glancing at the

[*Turn page*]

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covers, my eyes raced from book to book. Suddenly I saw it. With a mightly surge of strength, I dipped my hand into my pocket and withdrew 15c.

The newsdealer handed me my purchase and I proudly tucked it under my arm and strolled down the street. Suddenly I realized what I had done! Oh, fool that I was! I had bought the Winter Issue of STARTLING STORIES! I tried to sell it back to the newsdealer. I even offered him $5.00 if he would take it off my hands! But I couldn't get him to take it. I was stuck with it.

Well, as long as I had it, I figured I might as well look it over. And look it over I did! The cover told me that Ed Hamilton was back with a Captain Future Novel. Well, SS couldn't be as bad as I *thought* it was.

Speaking of the cover, what an improvement Bergey made on the Fall cover. Here's Cap Future and Joan zooming through space. All is fine except that Joan has no space-suit on, and I quote page 45—"They rapidly donned the space-suits." Hmmm, for that small error, Bergey only gets a 92 on his cover.

Hamilton's story, "Outlaw World," rates a 96. As usual Edmond came through with a neat novel, especially when it is a CF yarn. Brett Sterling was a good substitute, but I'll take E. H. any day. Do you agree with me?

Orban's illustrations were all right, and rate a 91, although I've seen him do better. Not only that, but I've seen better inside pics in SS and TWS than there were in this issue. Much better.

"The Forgotten Man of Space" by P. S. Miller rated 87. It was good, but not as good as the usual run of Hall of Fame stories. But as usual the "Futuremen," your "Companions of Captain Future" feature, was very good. The one about Eek was worth a 94 to me.

By the way, now that the war is over is there any possible way I could obtain back issues of Captain Future's own magazine? If not now, when will I be able to? And speaking of CF, when will he be back in his own magazine? I'm sure I'm not the only one anxious to see him back inside his own cover again.

Sam Merwin's "Jimson Island Giant" gets a 90. Enough said.

Ah, "The Worlds of Tomorrow", a CF feature I have always enjoyed. I am awarding it a 93 this time for its "Vulcan, the Outlaw World." Roses to Rehm's impression of you, Sarge. I never yet have seen a better likeness. THE ETHER VIBRATES was a lot of fun to read. It always is. Oh, well—maybe some day I'll see one of my letters in it.

Well, all scores averaged, get a straight 91 6/7ths. Being good natured, kind and understanding, I'll give your department a 92.

I think I'll stop for now. Until you turn white with purple stripes and orange polka dots from drinking Xeno, I'll toast SS, TWS and, of course, CF, in a guzzle of Plutonian pink gin. It's only 193 1/7th proof. Hic!—*Riverside Military Academy, Gainesville, Georgia.*

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Well, that's that, fansies. Try and get your epistles in a little sooner from now on so that Frogeyes, Wart-Ears, Snaggletooth and Ye Sarge can get to work on them a little earlier. We promise to do a job you'll not soon forget. Amen until next swing around the System.

—SERGEANT SATURN.

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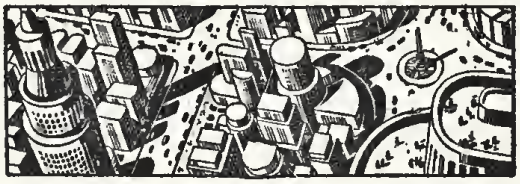
REVIEW OF THE SCIENCE FICTION FAN PUBLICATIONS

By

SERGEANT SATURN

BEFORE turning to the regular Fanzine Reviews, Ye Sarge would like to mention a couple of items that seem to him to be deserving of comment.

The first is the second booklet to appear from the Alden Press, compiled by Forrest J. Ackerman in memoriam to his brother, who was slain in action fighting the Nazis last year. A nice printing job, its contents are mostly taken up by a reprint of an autobi-



ographical sketch by Francis Flagg describing with savage bitterness how a brother of his was crushed to death by economic forces following World War One.

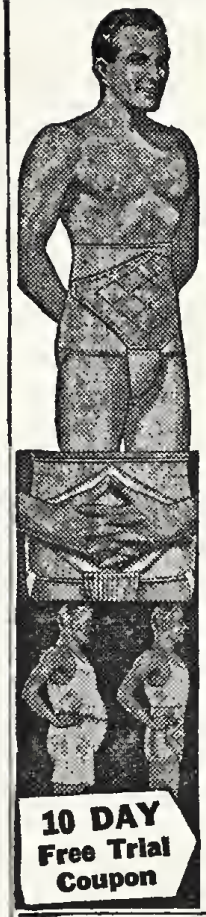
While the memorial idea is a fine one, this seems in questionable taste, to say nothing of relativity, to anyone but an out-and-out nihilist. Ho hum.

But a savage rebuke to one David D. Dagmar, another Californian, who has produced something that hardly belongs in fandom at all. It is called MAXIN 92, whatever that means. Ye Sarge is going to quote a Fanzine editor and author, Joe Kennedy, of Dover, New Jersey, who covered the newcomer quite adequately with tar and feathers in his VAMPIRE. Says Joe:

> This one is a pathetic mixture of fact and fancy, no proof whatever being offered for any of the statements. In the main, the bulk of the mag consists of letters from people who really need a visit to the doctor. There are numerous mentions of odd dreams and nightmares. . . The mag is rounded out by filler quotations rather naively labeled as such, and some full page plugs for a well-known prozine. . . Dagmar, by the way, is reported to have paid $400 to have the mag printed. From the numerous typographical blunders we'd say the guy was robbed. . .

Which seems to say enough and very neatly too. Meanwhile, according to a new cardzine entitled MERCURY, Doris Currier, the well-known wonder-witch of Salem (Mass., not Oregon), is reputed to be planning another fanzine as well as another convention of fans. The 'zine will be welcomed, at least by Ye Sarge, since the list up for review this issue is about at low water.

[*Turn page*]



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Only seven magazines could be fitted into the A list, while the B list, exclusive of the cardzine mentioned above, totaled but one more. Are you fellows and girls losing interest or energy, or are you giving up on the Sarge's honest, integral reviews? How about you Liebscher, and you, publishers of SHANGRI L'AFFAIRS? What gives?

Well, for what we have on hand, here goes:

CEPHEID, 2302 Avenue O, Brooklyn 10, New York. Editor, Milt Lesser, 10c per copy. Published quarterly. 40c per year.

Lesser has an interesting looking new magazine here, although his cover is of the involuntary horror variety. The verbose Ray Palmer is still trying to convince fen he's serious about Mu (or is it spelled moo?) in a short item. Chatter is good for an East-Coast 'zine and P. Schuyler Miller blasts back in louder if not as erudite syllables at Edmund Wilson of the New Yorker for the latter's attack on Lovecraft. We're on Wilson's side personally.

FANTASY COMMENTATOR, 19 East 235th Street, New York 66, New York. Editor, A. Langley Searles. 20c per copy, 6 copies $1.00.

As heavyweight as ever, this issue contains plenty of meat none the less. Moskovitz begins a detailed, scholarly and rather pretentious history of STF and several other articles seem to be focused chiefly on dissecting the prozines, including an article on Taine by Richard Witter. All good stuff, but a little more diversity of material would make the whole more intriguing.

THE ACOLYTE, 1005 West 35th Place, Los Angeles 7, California. Co-editors, F. T. Laney & S. D. Russell. Published quarterly. 15c per copy, 4 copies 50c.

An immense and much bibliographed article on M. R. James occupies the bulk of this issue (24 single-spaced pages!) as authored by co-editor Sam Russell. It is almost a PHD thesis and no fooling. In what space is left, Laney emerges with some editorial comment while Bob Tucker turns straight man for once with some practical hints on how to build an STF library. What reviews the ish has space for are competently handled by Fritz Leiber Jr., E. Hoffmann Price and others. Still a top-flight fanzine if a little one-track this time out.

THE GROTESQUE, 1870 East 33rd Street, Brooklyn 10, New York. Editor, Ron Christensen. 5c per copy.

Another new one, at least to Ye Sarge, despite more or less spritely contributions by Charles Burbee and Joe Kennedy, this job, in content (which is sophomoric for the most part), printing (which is barely legible) and cover (which is aromatic symbolism) would belong on the B list in any but an uncrowded month like this one. Enough said and better luck next issue.

THE SCIENTIFICTIONIST, 13618 Cedar Grove, Detroit 5, Michigan. Editor, Henry Elsner Jr. Published irregularly at 10c per copy.

More dissection of the poor prozines, especially by Francis T. Laney and John Stadter Jr., in which both authors seem to resent the fact that they are not literary magazines. Heck, are they supposed to be? Un-

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distinguished book reviews and a not unobvious piece on scientific progress in wartime fill the bulk of the second issue. Thoughtful, if a bit angry.

VOM, Box 6475 Metro Station, Los Angeles 55, California. Editor Sergeant Forrest J. Ackerman. 15c per copy, 7 issues $1.00.

The old fen letter box, still probably the most provoking, stimulating and amusing of all fanzines, is back in issues 45 and 46 with two of the best covers ever seen on any STF publications, pro or am—done respectively by Wiedenbeck and Goldstone. Fen who missed them missed something swell.

VAMPIRE, 84 Baker Avenue, Dover, New Jersey. Editor, Joe Kennedy. Published irregularly at 10c per copy.

Kennedy, in his fourth issue, has come up with far and away his most ambitious effort. We liked it in spite of a protracted interview with Ye Sarge entitled "Behind the Xeno Jug". Speer's playlet on fen seemed about average for such efforts, but Tucker and Laney were in excellent form and Chidsey's book reviews were oke. As for Tigrina's "Oh Sole Meow!"—we failed to find it.

Well, Kiwis, that's the A list this time out—small and not a knockout but possibly more sombre in tone than any such group of fanzines Ye Sarge can recall. This brave new world seems to be turning a trifle sour on the kiddies. And from our vantage point on the asteroid, we can't say that we blame them.

Now for the busy B's—

ERGERZERP, Published by Ron Christensen at 1870 East 33 Street, Brooklyn 10, New York. Bi-weekly. 3 for 5c. Fan chatter which looks a lot better to ye ed than it did two issues back. No FANEWS, but not bad, not bad.

FANTASY-TIMES, Domestic—published by Sam Moscowitz, 446 Jeliff Avenue, Newark 8, New Jersey. 5c per copy. Foreign—published by James V. Taurasi and Ray Van Houten, Le Havre, France. Chatter and editorials in equal doses. One of the most interesting news sheets thanks to its overseas slant.

PSFA NEWS, Published 3507 North Sydenham Street, Philadelphia 40, Pennsylvania. Published monthly. 10c per copy, 6 issues 50c, 12 issues $1.00. Mostly meetings of the Philadelphia Science Fiction Society, complete with minutes and some very minor and very corny poems, gags and other contributions. A bit too local.

QX, Published 123 Edna Place, Buffalo 8, New York. Ken Krueger editor. 3 copies 10c. Krueger, now in uniform makes a creditable if highly (or is it lowly?) juvenile effort to keep his fanzine activity going under duress.

TERRIFYING TEST-TUBE TALES, Published by George R. Fox and Joe Kennedy at 460 Orchard Street, Rahway, New Jersey. Price and publication dates unlisted. Ye Sarge hasn't quite figured this little item out, although it seems to be another very local job with a larding of parody that must have the late Charles Stewart Calverly doing horizontal pirouettes in his crypt.

THE FANEWS, Published 1443 Fourth Avenue South, Fargo, North Dakota, Editor, Walt Dunkelberger. Published irregularly, 2c per sheet. Dunk has certainly done wonders with what was once a cardzine. It is now far and away the livest, most complete and most interesting of all fan journalistic efforts. Plenty of information, enough anger to give it spice without being sore-headed and an occasional surprise feature. Keep it up, Dunk.

THE STELLARITE, Published irregularly at 4 Winship Avenue, San Anselmo, California. Editor, John Cockroft. 5c per copy. 6 for 25c. A dim hecto job mostly full of a reprint by D. D. Sharp. (For Editor Cockroft's private file—the other Joe Kennedy was not a hoax. SS).

WOPPLE-KIT, Published by Walter A. Coslet, Box 6, Helena, Montana. Published irregularly at 3c per copy. A legal-sized one-sheet containing swap offers of many descriptions on lithographed type that falls below Ye Sarge's visibility deadline. Sure cure for 20-20 vision as is. Try and clear it up, Walter.

That's the crop for this issue, fens. How about giving Ye Sarge a little more work in this department for the July issue. We are waiting with baited breath—baited with Xeno. Take it away, Wart-ears, and let's be off for Arcturus.

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POLTON Cross, the celebrated British scientifictionist, steps forward into the spotlight to take his bow this issue. Mr. Cross, whose OTHER EYES WATCHING is the featured novel in the current issue of STARTLING STORIES, is distinguished for being one of the most exhaustive students of actual scientific fact among his colleagues in the field, not only overseas but also in the United States.

As his current novel reveals, he has delved into optics in a manner that should make even Murray Leinster, most scientific of our native STF writers, look at his laurels. In the following paragraphs, he explains further how he happened to conceive OTHER EYES WATCHING and how he set about writing it.

The need for a new pair of spectacles and a consequent interesting discussion with an oculist friend of mine in a darkened sight-testing room started the basis for this story.

I happened to remark as he played around with lenses that it is a pity in these days of physical destruction coincident with advancement of science that no great oculist surgeon has devised a means of making artificial eyes which can see.

Practically every other part of a damaged body can be replaced, but blindness seems to defeat the best of them. My friend observed (with more fiddling) that such a feat is beyond science, as yet, because of the complications involved. If it *could* be done, what a boon to Mankind!

I left him with many thoughts in my mind, discussed the theory of synthetic optics with other acquaintances of a scientific turn of mind, and they all said nothing

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could be done. But it might be done in a science-fiction novel! Okay, I'd figure out how and confound them all. So "Other Eyes Watching" got started.

Then came the problem. Just to produce artificial eyes and get the acclaim, or the brickbats of a grateful world was no use by itself, though in the hands of a master it might make a classic "semi-straight" novel. For the zealous science-fictioneers I needed something more.

Realizing, from my discussion with the oculist, that the merest aberration of the cornea produces light-refractions and blurrings, I reasoned that it MIGHT happen that a flaw in a *synthetic* cornea might make the owner able to see things other than just the everyday world around us. Perhaps—the fourth dimension?

Now I was getting somewhere! I disappeared into Jeans' and Eddington's postulations on the fourth dimension and "other spaces" and proceeded to work out from their postulations exactly what the results of a journey into such a plane might be.

Technically, of course, it is no more possible to explain the fourth dimension in cold print than it is to describe green to a blind man. One can only accept certain premises and the effects of foreshortening distances, light waves of infinite velocity, sky and landscape stretching to infinity, are as near as can be the possible effects one might observe through *three dimensional* senses if transported into four dimensional space.

So the idea of synthetic optics, cornea aberration and the fourth dimension began to tie up, and out of it all emerged "Other Eyes Watching," containing, I hope, a few possible theories on evolution and the disappearance of past glories. All of us must have felt that at some time such a world might exist. Our consciousness has felt the presence of other beings and things so irresistibly close, yet so vastly far away.

Altogether it has been a glorious excursion into the might-have-been, and how it ended for the characters in the story you will see for yourselves, if you trouble to read that far.

I am sorry for only two things—that the poor girl Vera Brooks got knocked around so much (for between you and me I began to like her quite a lot myself), and that "Ophthalmic" is such a confoundedly hard word to spell correctly.

Well, so be it. I leave you to your excursions, and I trust you will not develop any of the headaches which fell to me when I had to examine the exact processes needed to make an eye see!

—*Polton Cross.*

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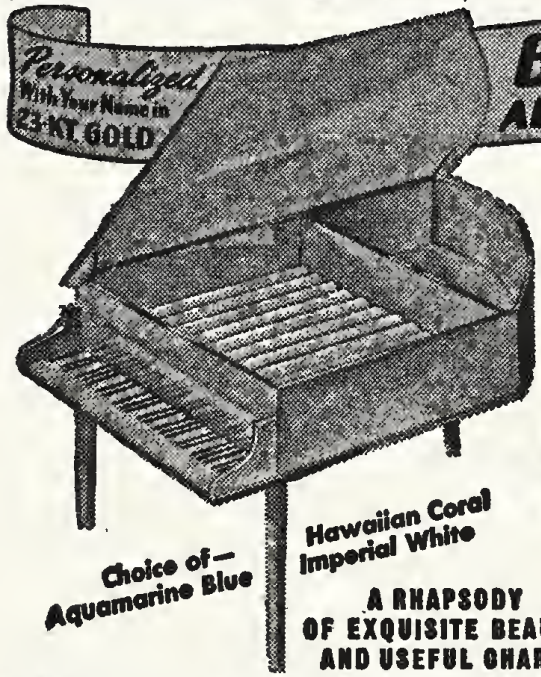

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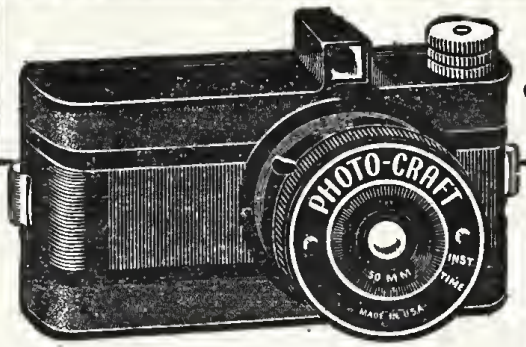

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